Strait of Georgia Sport Fishery Creel Survey Statistics for Salmon and Groundfish, 2008

P.R. Zetterberg and E.W. Carter

Fisheries and Oceans Canada
Science Branch, Pacific Region
Stock Assessment Division
3225 Stephenson Point Road
Nanaimo, British Columbia
V9T 1K3

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STRAIT OF GEORGIA SPORT FISHERY CREEL SURVEY STATISTICS FOR SALMON AND GROUNDFISH, 2008

by

P.R. Zetterberg and E.W. Carter

Fisheries and Oceans Canada
Science Branch, Pacific Region
Stock Assessment Division
3225 Stephenson Point Road
Nanaimo, British Columbia
V9T 1K3

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ABSTRACT

Zetterberg, P.R., and Carter, E.W., 2010. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 2008. Can. Manuscr. Rep. Fish. Aquat. Sci. 2929: xiv + 123 p.

This report documents the 2008 catch and effort estimates and compares 2003 to 2007 data for the Strait of Georgia sport fishery creel survey. Catch and effort statistics are presented for each month, Pacific Fishery Management Area and by individual species. Strait of Georgia creel survey data collection began in 1980 and continues today. Historical data are presented from as far back as 1960 and comparisons are made between the current data and previous five years (2003 to 2007) to determine recent trends in catch and effort.

The 2008 Strait of Georgia statistics were derived from 5,981 fishing interviews and 85 aerial surveys. For the entire year anglers conducted an estimated 90,904 boat trips and kept 22,587 Chinook, 1,148 Coho, 79 Sockeye, 2,256 Pink, 3,061 Chum salmon, as well as 2,951 Halibut, 3,075 Lingcod and 5,200 rockfish. Comparative (May to September) effort decreased by 20.2% from 96515 boat trips in 2007 to 77,028 in 2008. Total salmon catch also decreased by 80.2% from 110,450 in 2007 to 21,855 in 2008. Based on these estimates, the catch per boat trip (CPUE) for all salmon in 2008 was 0.28.

A total of 941 Chinook and 35 Coho salmon were examined for adipose fin clips. Of these, 32.5% of Chinook and 65.7% of Coho had adipose fin clips. The Chinook catch consisted of 1.8% age 2 fish, 60.2% age 3 fish, 33.5% age 4, and 4.5% age 5 with no age 6 fish.

RÉSUMÉ

Zetterberg, P.R., and Carter, E.W., 2010. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 2008. Can. Manuscr. Rep. Fish. Aquat. Sci. 2929: xiv + 123 p.

Ce rapport présente les estimations relatives aux captures et à l'effort de pêche en 2008 ainsi qu'une comparaison entre ces estimations et les données recueillies de 2003 à 2007 dans le cadre d'une enquête auprès des pêcheurs au sujet de la pêche sportive dans le détroit de Georgia (Strait of Georgia sport fishery creel survey). Les statistiques concernant les captures et l'effort de pêche sont répertoriées par mois, par secteur de gestion des pêches de la région du Pacifique et par espèce. Depuis 1980, on recueille des données au moyen de cette enquête. Les données historiques présentées remontent jusqu'à 1960, et les données actuelles sont comparées à celles des cinq années précédentes (2003 à 2007) afin d'établir les tendances récentes en matière de capture et d'effort de pêche.

Les statistiques de 2008 pour le détroit de Georgia ont été établies à partir de 5 981 entrevues auprès de pêcheurs et de 85 relevés aériens. Dans l'ensemble de l'année, on a estimé que les pêcheurs ont effectué 90 904 voyages de pêche et conservé 22 587 saumons quinnats, 1 148 saumons cohos, 79 saumons rouges, 2 256 saumons roses, 3 061 saumons kétas, 2 951 flétans, 3 075 morues-lingues et 5 200 sébastes. D'après les comparaisons établies, l'effort de pêche (de mai à septembre) a diminué de 20,2 %, passant de 96 515 voyages de pêche en 2007 à 77 028 en 2008. Le total des prises de saumon a également diminué (de 80,2 %), passant de 110 450 poissons en 2007 à 21 855 en 2008. Sur la base de ces estimations, la capture par unité d'effort (CPUE) en 2008, toutes espèces de saumon confondues, était de 0,28.

Au total, on a examiné 941 saumons quinnats et 35 saumons cohos afin de vérifier s'ils étaient marqués à la nageoire adipeuse : 32,5 % des saumons quinnats et 65,7 % des saumons cohos portaient une étiquette à la nageoire adipeuse. Parmi les saumons quinnats capturés, 1,8 % étaient âgés de deux ans, 60,2 % étaient âgés de trois ans, 33,5 % étaient âgés de quatre ans, 4,5 % étaient âgés de cinq ans, et aucun n'était âgé de six ans.

INTRODUCTION

This report documents the 2008 catch and effort statistics with comparisons to the 2003 to 2007 survey for the Strait of Georgia (SG) sport fishery creel survey and presents the methodology for collecting these data. Data are presented in tables and graphs with catch and effort dating back to 1984. Catch and effort tables are displayed by month, Pacific Fishery Management Area (PFMA) and species. For comparison purposes and unless otherwise specified, the annual data presented are from the period May through September only.

The 2008 report is one of a series documenting the activities of the creel survey and providing official SG tidal sport fishery catch statistics. A list of previous reports in this series may be found in Appendix A.

BACKGROUND

Historically, the SG fishery supported what was one of the most valuable recreational fisheries in British Columbia. Coded-wire tag recoveries indicate catches consist primarily of Fraser River, Puget Sound and East Coast Vancouver Island salmon stocks. There has been evidence of declining stocks since the 1970's (Argue et al. 1983). There is also evidence based on declining marine survival rates of salmon stocks (Cross et al. 1991; Beamish et al. 1994), that marine environmental factors may be involved. Various groups (First Nation, commercial, and recreational) on both sides of the Canada/U.S. border depend on these stocks.

The SG creel survey study area (Fig. 1, Appendix B) comprises over 5,900 km^2 of water surface area and has in excess of 2,400 km of shoreline. From its southern end near Victoria, the area extends about 290 km northwest past Campbell River and at its greatest width is about 32 km wide. Two major population centres, Vancouver and Victoria, and many smaller centres such as Nanaimo and Campbell River are located within the study area. Creel surveys in Juan de Fuca Strait (JDF) are conducted by two groups; Fisheries & Oceans Canada (DFO) Strait of Georgia Stock Assessment Group (to Sheringham Pt.) and DFO West Coast Vancouver Island Group (Sheringham Pt. west). PFMA 20 (SG) refers to the area east of Sheringham Pt. to Albert Head. Similarly, the Johnstone Strait area which is comprised of PFMA's 11, 12, and 13 are surveyed by two groups; DFO Strait of Georgia Group and DFO Northern Vancouver Island Group. Over 500 boat launch ramps, marinas and public wharves as well as thousands of private boat launching facilities provide ocean access.

The recreational fishery is active throughout the year but over 85% of the effort occurs in the summer months of May to September (Collicutt and Shardlow 1993). The most sought after species in the SG recreational fishery are Chinook (*Oncorhynchus tshawytscha*) and Coho (*O. kisutch*) salmon, but in recent years significant fisheries

directed at Pink (*O. gorbuscha*), Sockeye (*O. nerka*), rockfish (*Sebastes* spp.) and particularly Halibut (*Hippoglossus stenolepis*) have developed in certain areas.

The recreational fishery remains the primary harvester of Chinook and Coho in the SG. Effort in this fishery has fluctuated from about 200,000 boat trips in 1960 to peaks of 769,000 in 1980 and 600,000 in 1988. The all time low of 77,028 boat trips was seen in 2008.

Creel survey data are used for a variety of management and reporting purposes within Fisheries and Oceans Canada (DFO). Catch and effort information is also used by local people (both inside and outside DFO) to monitor the fishery in their area. In addition, creel survey information is used to predict the effect of regulation changes and to measure success of conservation actions imposed. The adipose clip information collected during the survey is provided to the Mark Recovery Program (Kuhn et al. 1988) through the Sport Head Recovery Program and used in combination with other data for exploitation rate, marine survival and stock distribution analyses.

OBJECTIVES

The specific objectives of the 2008 Strait of Georgia creel survey were:

1. To estimate the sport angler effort, catches and releases of Chinook, Coho, Chum (*O. keta*), Pink, and Sockeye salmon, Halibut, Lingcod (*Ophiodon elongatus*), rockfish and other finfish by month for Pacific Fishery Management Area (PFMA) 13 through 20(SG), 28, and 29.

2. To estimate the catch rate of adipose-clipped Chinook and Coho in the sport fishery.

3. To estimate the age composition and mean length-at-age for Chinook, and length frequency for Chinook and Coho in the sport fishery.

METHODS

STUDY DESIGN

The design of the SG creel survey conducted in 2008 was similar to that used by DPA Consulting Ltd. (1982) with some modifications to the data analyses, sampling intensity, flight routes and data processing. It is comprised of two independent surveys: angler interviews and overflights. Angler interviews provide data on sport fishing catch per unit effort (CPUE) and daily activity patterns. Overflights provide estimates of the total sport fishing effort in the study area at the time of the aerial survey. These data are combined to provide monthly estimates of total sport fishing effort and total catch of salmon and groundfish in the sport fishery (English et al. 2002). In its simplest form, the estimated total catch is calculated by multiplying the estimated total effort by CPUE. For the purposes of this report, 'catch' is defined as fish landed and does not include releases.

The fishery was stratified according to the following criteria:

1. Month. The survey operated from 1 April to 31 October for the entire geographic area and PFMA's 19 and 20(SG) received 12 months of coverage in 2008.

2. Geographic area. Catch and effort estimates were produced for PFMA's 13 through 19, 20(SG), 28, and 29.

3. Day type. Weekend and mid-week days were considered independently because sport fishing activity is known to differ for the two types of days. Statutory Holidays were treated as weekend day type.

4. Time of day. Sampling shifts were conducted during set time periods. A sampling shift is defined as a consecutive time period of interviewing anglers by one creel surveyor. From May to October sampling shifts occurred during one of three time periods within a day: early (0800 to 1400 hours), mid-day (1200 to 1800 hours) or late (1500 to 2100 hours). Due to shorter daylight hours during winter, only a single sampling shift occurred after October (1000 to 1600 hours).

Various landing sites were chosen as locations for sampling shifts. Site selection was based on four criteria: representativeness, traffic volume, site accessibility and adequate observation points. Discussions with local fishers, marina operators, Fishery Officers, and long term creel survey staff, along with data from previous surveys were used to choose sites that were representative of the local sport fishing activity (i.e. sites which were used by a wide cross-section of anglers). Sites with expected traffic volumes of more than 15 boats per day in the summer were considered as possible sampling locations. Expected traffic volumes for sites were compiled from previous surveys or from discussions with marina operators or local Fishery Officers.

Site accessibility refers to whether an interviewer can easily reach a site by car during the defined shift hours. Only sites with good accessibility were selected. As a result, landing sites on most of the islands in the SG were excluded from the survey. The final criterion, adequate observation points, was essential for interviewers to obtain an accurate count of all boats returning to a landing site.

Within each month, each chosen site was randomly allocated between four and 15 sampling shifts. These sampling shifts were divided equally among weekend and mid-week days and early, mid, and late daily time periods.

In 2008, interviews were conducted at 33 designated landing sites (boat ramps, marinas, or resorts; Fig. 1) representative of the sport fishing activity in the survey area at a particular time. Targets of desired precision and number of surveyors available dictated the number of sites selected in each area. Specific sites would be added or removed from the schedule as fishing effort shifted over the season. For each area, day type, and work block stratum, sampling shifts at a site were chosen on a random basis from the total number of shifts available. For definition of the above terms (day type, work block, shift) see Appendix C.

DFO coordinated data collection, data entry, and conducted the estimation of catch and effort statistics. Catch and effort estimates are generated by sub-PFMA (smaller geographic units within each PFMA) but data are summarized at the PFMA level.

DATA COLLECTION

Angler Interviews

Surveyors were stationed at boat ramps or marinas for sampling shifts to interview anglers as they returned from fishing. The number of boats returning to a site during a sampling shift as well as the number of interviews attempted and completed were recorded on a tally sheet. For each boating party landing, the following information was recorded on the interview form (Fig. 2):

1. Total number of licensed anglers in the boat.
2. Time of landing.
3. Whether the party had been sport fishing.
4. Whether the trip included the services of an angling guide.
5. Time of departure and length of trip.
6. Time during which fishing lines were in the water.
7. Average number of lines in the water.
8. Catch Summary: -Total number and species of kept and released fish for each of the sub-PFMA's (possible to record for three separate sub-PFMA's).

-Number of hours spent fishing, type of fishing conducted and primary fishing location in each sub-PFM

9. Adipose fin-clip status for Chinook and Coho
10. Number of hours directed at each species.
11. Loss of catch to seals or sea lions.

Interviewers who are trained in fish identification inspected the catch of each boating party willing to participate in the survey. Landed Chinook and Coho were checked for a missing adipose fin, which indicates that the fish may be of hatchery origin and possibly the presence of a coded-wire tag (Kuhn et al. 1988). In addition, scale samples for age determination and measurements of nose-fork length were taken during every sampling shift where Chinook and Coho were inspected.

Groundfish species were also biologically sampled. Lingcod landed were measured (fork length), sex was determined, and a portion of the dorsal fin was removed and placed in a labelled envelope for use in age determination (McFarlane and King, 2001; MacLellan, 2004). Other species including rockfish and Halibut were identified to species and measured (fork length).

In 2008, Strait of Georgia creel surveyors were part of a pilot project to electronically enter their data into the CREST (Catch and Release Estimation Survey Tool) system using personal computers. Once entered, these data were then exported to a DFO database.

Effort counts

Effort, as individual boats actively fishing, is counted via aerial surveys of the study area. Aerial surveys were conducted year round in PFMA's 19 and 20(SG) and from 01 April through 31 October inclusive for the entire study area. The study area is divided into approximately equal northern and southern sections for the purposes of aerial effort counts. Two airline companies (Pat Bay Air and Island Air) in Victoria and Courtenay, travelled along pre-defined routes in the southern and northern sections, respectively (Fig. 3a and b). Along with the pilot, each flight was staffed by a single observer trained to identify boats actively engaged in sports fishing activity.

Flight paths and times of departure were designed to cover major concentrations of sport fishing activity at peak periods and number of overflights each month was governed by budget. Planes flew at an altitude of 150-300 m (500-1000 feet) to facilitate a broad range of vision and still allow easy identification of vessel type. Overflights conducted between April and October range between three (3) to 4.5 hours covering a flight path of 600 to 670 km at speeds of 145 to 220 kph. During the January to March and November to December periods in PFMA'S 19 and 20 (SG), flights were 1.5 hours covering a 200 km route. Days for overflights during a month were randomly selected for each day type (weekday and weekend). Flight paths are reviewed annually and

adjustments are made based on observer reports of fishing activity outside of the current path.

DATA ANALYSIS

Data analysis included calculation of catch and effort statistics, calculation of variance of total fishing effort and catch, estimation of marked (coded-wire tagged) Chinook and Coho salmon, and the estimation of age and length composition of retained Chinook. Established methods and equations used to analyse the above data are found in Appendix C (English et al. 2002).

Throughout this document, between-year comparisons are made using data from May to September only. Unless otherwise indicated, references to annual values include all months and areas surveyed. Due to insufficient data in some months and from certain PFMA's some summaries are presented by region. Three regions are defined: North Gulf represented by PFMA's 13 to16; South Gulf represented by PFMA's 17, 18, 28, and 29 and Victoria represented by PFMA's 19 and 20(SG).

RESULTS AND DISCUSSION

DISTRIBUTION OF SAMPLING EFFORT

The 2008 creel survey ran from April to October in all PFMA's of the SG. Additional creel survey coverage was provided throughout the year in PFMA's 19 and 20(SG) (Table 1).

A total of 5,981 interviews with finfishing anglers at 33 landing sites, and 85 overflights were conducted in 2008 (Table 1). Monthly distribution of interviews generally reflected monthly distribution of fishing effort (number of boat trips; Fig. 4). While the survey goal is to attain interviews from 10% of fishing effort, total interviews in 2008 represent 6.6% of estimated total fishing effort for the entire study area (90,904 full year boat trips; Table 5). Interviews involving actively fishing anglers ranged in each PFMA from a low of 2.0% in PFMA 15 to a high of 29.8% in PFMA 19 (Table 1).

All 2008 SG sport fishing creel survey catch and effort statistics are summarised for each species by month and PFMA. Fishing effort and catch statistics by species are presented for each combination of month and PFMA (Appendices D-1 to D-29).

Anglers made 77,028 boat trips during 2008 (May to September); this is a 20.2% decrease in effort from 96,515 trips completed in 2007 and 31% below the five-year average of 110,943 trips (Table 2). Based on variables including economic, environmental, and stock status, estimated effort fluctuates annually (Fig. 5; Appendix H). Fishing effort followed the same general seasonal pattern as seen in previous years where effort levels climbed steadily from April, peaked in August and declined in

September and October (Fig. 6). In 2008, 84.7% of fishing effort occurred between May and September.

Certain sites are known to have considerable guided fishing effort. Unpublished data from previous surveys suggest that CPUE from guided boats may be higher than unguided boats. However, unguided fishers in private boats who fish regularly throughout the year may have a similar trend in CPUE. Guided versus unguided was documented by interviewers, however, at this time the catch estimation program does not generate independent catch and effort estimates for the two types.

CREEL SURVEY SPORT FISHING CATCH

Total finfish sport kept catch in the SG creel survey for 2008 from January through December was estimated at 50,978 pieces and consisted of 57.2% (29,151) salmon, 32.6% (16,627) groundfish and 10.2% (5,200) rockfish (Table 5, 18, and 22). These values have only been expanded in areas where year-round surveys exist. Anglers released an additional 24,918 salmon, 57,635 groundfish, and 16,349 rockfish of mixed species for this same period (Table 6, 19 to 23). Comparisons of CPUE between salmon, groundfish, and rockfish in general are summarized in Appendices E-3 and E-6 by month and PFMA, respectively.

Chinook catch improved in the early 2000's but has declined over the past four years to below 30,000 (Table 2). Chinook catch decreased by 37.4% from 28,665 in 2007 to 17,936 in 2008 largely due to a 20.2% reduction in effort. Similarly, CPUE was also lower in 2008 at 0.25 compared to 0.30 in 2007.

Coho catches have fluctuated widely, even within the 2000's. From a high of over one million pieces in 1988 catches have continued to decline. The 1999 Coho catch was an all time low of 315 pieces due to a majority of areas being closed to Coho retention resulting from extremely poor returns of specific stocks in 1998. Coho catch began to improve in the early 2000's as stocks showed some recovery as well as the advent of mark selective (adipose-clipped only) fisheries in selected areas on hatchery stocks. Since 2005, catches have dropped again as restrictions on Coho retention have been reintroduced. Given the extent and variation of regulations for Coho it is difficult to make annual catch estimate comparisons.

Regulations

General regulations which affected the 2008 SG sport fishery for major finfish species are summarized below (these regulations do not include tidal and non-tidal portions of the Fraser River):

- All Coho, Sockeye, Pink and Chum must measure 30 cm or more (tip of nose to fork of tail) and the daily limit was four (4), possession eight (8). There was no annual limit on these species.
- The minimum size limit for Chinook was 62 cm. Daily limit of Chinook was two (2), possession of four (4). In a portion of PFMA 19/20 (Cadboro Bay to Sheringham Pt.), the minimum size limit for Chinook was 45 cm.
- The annual limit for Chinook coast wide was 30. The annual limit for PFMA's 13 to 19 (north of Cadboro Point) is 15 Chinook. The annual limit for PFMA's 19 and 20 (south of Cadboro Point to Sheringham Point) was 20 Chinook.
- Conservation measures were implemented in specific PFMA's to protect certain Chinook stocks in 2008 including early timed Fraser River and lower SG.
- Two (2) adipose marked Coho per day could be retained from 01 June to 31 December.
- The recreational fishery for Fraser River Sockeye in certain South Coast marine waters was open to sockeye retention from 26 July to 30 July.
- The recreational rockfish and Lingcod fisheries in the SG were operated concurrently and were open from 01 June to 30 September. For one (1) year only the minimum size limit for Lingcod was reduced from 65cm to 60cm.
- The recreational Halibut fishery was open from 01 March to 31 December, with temporal changes to daily and possession limits.

For a comprehensive list of the major finfish species and area regulations with exemptions and specifics to the above list, please see Appendix I.

Salmon

Creel survey salmon sport catches for the SG in 2008 totalled 21,855 pieces for May to September and 29,151 when including all areas covered from April to October as well as PFMA's 19 and 20 (SG) for the entire year (Tables 4 and 5). For the May to September period, the catch consisted of 82.1% Chinook, 4.8% Coho, 0.4% Sockeye, 10.3% Pink, 2.3% Chum, and 0.1% unidentified salmon. Total catch is 78.5% lower than the 2003-2007 average of 101,501.

In 2008, anglers kept 17,936 Chinook (Table 2), compared to the five-year average from 2003 to 2007 of 30,670 (Table 2, Fig. 5). Within the previous five years, catch ranged from 26,728 in 2006 to 36,207 in 2004. Monthly Chinook catches increased steadily through June and July and peaked in August (Table 5, Fig. 7).

Seasonal (May to September) average CPUE (kept catch per boat trip) for Chinook has remained fairly constant over the past several years (Fig. 8). In 2008, CPUE reflected the general trend of lower catches with an average of 0.21 compared to the 2003

to 2007 average CPUE of 0.26 (Fig. 8, Appendix E-1). Appendix H summarizes annual Chinook catches back to 1960.

Spatial distribution of Chinook catch in 2008 followed a similar pattern to previous years with highest catches being in southern SG. For the entire survey period, PFMA 20(SG) recorded 48.2% of the estimated catch, followed by PFMA 13 (21.3%), and 19 (12.8%) (Table 7, Fig. 9, Appendix D-2). PFMA 20(SG) recorded the highest CPUE at 0.35 followed by PFMA's 13 (0.26), 19 (0.23), and 15 (0.21) (Appendix E-4). Peak catches occurred during July and August.

Coho catch in 2008 remained low, likely due to continued restrictions on Coho retention. Anglers kept 1,056 Coho which was 77.0% lower than 2007 (4,593) and 86.0% below the five-year average of 7,557 (Table 2, Fig. 10 and 11). Appendix H summarizes Coho catches back to 1960. Coho kept catch from May to September was 879 adipose-clipped and 177 unclipped for a total of 1,056 pieces (Appendix D-5). Of Coho with known mark status, 67.3% of adipose-clipped occurred in PFMA 20(SG) 13.1% in PFMA 13 and 11.5% in PFMA 28 (Appendix D-6). Unclipped Coho catch was split between three main areas; 48.7% in PFMA 14, 29.1% in PFMA 20(SG) and 19.2% in PFMA 13 (Appendix D-6).

Marine timing was early and estimated abundance was less than expected for returns of Fraser River Sockeye relative to the forecast. The diversion rate through Johnstone Strait averaged about 10% with the remainder migrating through Juan de Fuca Strait. Retention of Sockeye in the recreational fishery was allowed in 2008 but was limited to a five-day fishery from 26 to 30 July. Estimated encounters during this period for SG creel are listed by month in Tables 5 and 6 and by PFMA in Tables 7 and 8. Estimates by month and PFMA are listed in Appendices D-7 and D-8. Given the lack of recreational Sockeye opportunities in the past few years, we have not compared 2008 to previous years' data.

Since 2008 was an off year of odd year Fraser Pink salmon, catch was low at 2,256 pieces (Table 2, Fig. 12). Of this catch, 95.6% was landed in PFMA 13 (Table 7). Releases are presented in Table 6 by month and Table 8 by PFMA.

Chum salmon catch was a low 508 pieces (five-year average = 3,425) during the May to September period (Tables 2 and 5). Catch peaked during October at 2,548 pieces and 92.2% was taken in PFMA 13 (Tables 5 and 7, Fig. 13). Comparisons of yearly catch of not identified salmonid species are listed in Table 3.

In 2008, PFMA's 20(SG) (33.9%), 13 (20.4%), and 19 (13.8%) showed the highest effort expended with a total salmon CPUE of 0.39, 0.54, and 0.24, respectively (Fig. 14, Appendix E-4). While the highest fishing effort was typically seen during the June to September period, 2008 was unusual with the highest CPUE's being seen in the shoulder months. November and February showed CPUE's of 1.03 and 0.84, respectively (Appendix E-3).

There were also significant numbers of salmon released in 2008. Releases included 9,675 Chinook (five-year average = 20,283), 4,961 Coho (five-year average = 25,021), 228 Sockeye (five-year average = 1,721), 515 Pink (four-cycle average = 1,410) as well as 2,013 unidentified salmon (five-year average = 7,773) (Tables 2 and 3) for a total of 17,392 released salmon between May and September in 2008 (Table 6). Total releases in 2008 were highest in PFMA 20(SG) (7,834) and PFMA 13 (6,612) which accounted for 58.0% of all releases in the SG (Table 8, Appendix D-14). Chinook releases by legal and sub-legal status are also presented by month and PFMA (Tables 9 and 10).

Groundfish

The 2008 SG creel survey sport catch consisted of 21,827 groundfish, which made up 42.8% of the overall catch (Tables 18 and 22).

More accurate species identification has allowed catch estimates for most groundfish species, including rockfish. Previous reports (Hardie et al. 2003) have identified only three species of groundfish and nine species of rockfish; however, beginning in 2007 an additional nine species of groundfish were identified by creel surveyors. Lingcod and Dogfish catches have been recorded the longest and recording Halibut began in 1998 (Table 11). Tables 12 to 14 list groundfish catches by groups which were recorded since 2000.

Comparing the five-year average catch estimate from 2003 to 2007, with the exceptions of Lingcod, Halibut, Yelloweye Rockfish (*Sebastes ruberrimus*), Greenling (*Hexagrammidae* spp.), and Starry Flounder (*Platichthys stellatus)*, groundfish catch in 2008 decreased. Halibut and Lingcod catches have increased relative to five-year averages by 152.4% (five-year average = 849, 2008 = 2,143) and 79.7% (five-year average = 1,695, 2008 = 3,046), respectively. Catches of rockfish continue to decline (DFO, 2002) as additional rockfish conservation areas (RCA's) are identified. Rockfish catches decreased by about 48.9% from the five-year average of 9,849 to 5,033 in 2008 (Tables 15 to 17, and 22, Fig. 15).

Angler effort has also shown a decline over recent years from a high of 156,670 boat trips in 2003 to a low of 92,117 in 2005. Effort in 2008 of 77,028 trips decreased from 2007 (96,515), and was only 69.4% of the five-year average of 110,943 (Table 2).

The majority of recreational groundfish catch occurred between June and September, reflecting the high fishing effort in the summer (Tables 18 and 22; Fig. 6). Catch (by PFMA) for rockfish was highest in PFMA's 16, 20(SG), 17, and 19 with 27.4%, 21.3%, 14.5%, and 14.0% of the total catch, respectively (Table 24). The only area without any estimated Lingcod catch was PFMA 29. Lingcod catches were highest in PFMA 13 (24.8% of total), followed by PFMA 16 (21.0% of total; Table 20). Halibut were only caught in PFMA 19 (82.8%), 20(SG) (13.3%), 13 (3.3%) and 14 (0.6%; Table 20). Table 26 provides a groundfish catch summary for the entire survey period by major

catch areas. Tables 19 and 21 provide summaries of groundfish releases by month and PFMA respectively, including a breakdown of Lingcod by legal versus sub-legal.

Since 2001, nine species of rockfish have been identified throughout the survey with catch and release estimates generated for each (Tables 22 through 25). Only two species, Copper (*Sebastes caurinus*) and Quillback (*S. maliger*), showed significant catches in the SG (Table 27). The "other" rockfish category in this table consists of Black (*S. melanops*), Canary (*S. pinniger*), China (*S. nebulosus*), Redstripe (*S. proriger*), Tiger (*S. nigrocinctus*), Yelloweye (*S. ruberrimus*), Yellowtail (*S. flavidus*) and unidentified species. Table 27 provides a rockfish catch summary of major species for the entire survey period caught by PFMA.

Catch per unit effort for rockfish (Fig. 16; Appendix E-2, E-5,) was low throughout the survey period ranging from 0.04 in May to 0.08 in July and averaging 0.06 fish per boat trip. Catch per unit effort for both Halibut and Lingcod was 0.03 fish per boat trip (Appendix E-1).

A taxonomic reference of all species reported in this document is presented in Appendix F.

BIOLOGICAL DATA

Adipose-clipped Chinook and Coho

In 2008, 941 Chinook and 35 Coho were examined for adipose fin clips. The number of adipose-clipped Chinook and Coho observed and the total fish inspected by month and region are detailed in Tables 28 and 29. These data are presented by region as some PFMA's had insufficient numbers of fish examined for clips in some months.

Among Chinook examined during the May to September period, 13.9% had clips. The observed percentage of Chinook adipose-clips was 20.4% for Victoria region, 11.8% for South Gulf, and 7.1% for the North Gulf (Table 28). Among Coho examined for this same period, 67.9% had adipose clips. Regionally, percentages of adipose clips were 64.7%, 100.0%, and 66.7% for Victoria, South Gulf, and North Gulf, respectively (Table 29). The 2007 creel survey catch program generated estimates of adipose-clipped, wild, and not visually checked Coho by month and PFMA (Appendix D-5 and D-6).

A total of 163 Chinook with adipose-clips were returned to the Sport Head Recovery Program for coded-wire tag (CWT) extraction and decoding in 2008. The number of CWT's recovered by stock are summarized in Table 30.

Catch-At-Age for Chinook

During 2008, 736 and 558 Chinook were sampled for length and age analysis, respectively. Of the age samples, 454 were aged while 104 samples were not aged due to regenerated scales, lack of fresh water annuli, etc. Table 31 shows the monthly number and percent age composition of Chinook sampled for age. All ages represent the total age (including both freshwater and marine life stages). The age data are summarised graphically in Figure 17. The monthly age proportions were applied to the estimated monthly Chinook catches to provide a breakdown by age group (Table 32).

From 2003 to 2007, the Chinook creel survey sport catch in the SG showed a slightly higher average catch of 3-year olds (Age 3 – 45.0%; Age 4 – 43.2%). In 2008, 60.2% were 3-year olds and 33.5% were 4-year olds (Table 34).

Mean Length-At-Age for Chinook

The monthly mean fork length (FL) at age for the 454 Chinook for which both length and age data were available are presented in Table 33. Figure 18 shows the length frequency distribution for all measured Chinook. The overall mean length of age 3 and 4 fish was 701 and 792 mm, respectively. The largest salmon sampled was a 1060 mm FL Chinook landed at Sunny Shores (PFMA 20 SG).

There was a slight increase (1%) in the percentage of sub-legal size Chinook (below 45 cm in PFMA's 19 and 20 (SG) and 62 cm in PFMA's 13-18, 28, and 29) retained in the SG sport fishery in 2008 compared to historic creel survey data. Of the 736 retained Chinook that were measured from May to September in all areas (PFMA's 13-19, 20SG, 28 and 29), 2% were sub-legal. Even with this marginal increase, these percentages have dropped and remained low since the peak in 1989 when the 62 cm size limit was implemented (Table 35).

SUMMARY

A sport fishery creel survey was conducted in the Strait of Georgia (SG) in 2008 to estimate the catch of all important recreational finfish species and the total sport fishing boat trips. In this report, data are presented by month and Pacific Fishery Management Area (PFMA).

For the entire creel survey period (April to October in all PFMA's and a full 12 months for PFMA 19 and the portion of PFMA 20 east of Sheringham Point (20 SG)), sport fishers made an estimated 90,904 boat trips. A total of 5,981 finfishing parties (6.6%) were interviewed at 33 landing sites in the SG creel survey area. A total of 85 overflights were used to count fishing effort.

During this same period, sport fishers landed an estimated total finfish catch of 50,978 pieces of which 57.2% were salmon and 42.8% were groundfish. The 29,151 landed salmon consisted of 22,587 Chinook, 1,148 Coho, 3,061 Chum, 2,256 Pink, 79 Sockeye, and 21 unidentified salmon. Anglers released an additional 24,918 salmon of mixed species. The 21,827 landed groundfish consisted of 2,951 Halibut, 3,075 Lingcod, 5,200 rockfish, and 10,601 other groundfish. Comparisons are made to previous data, particularly the previous five years, to determine trends in catch, effort and catch per unit effort. Based on biological samples, we established that 32.5% of Chinook and 65.7% of Coho were adipose fin-clipped. In addition, age composition and length frequency distributions of Chinook are presented.

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LITERATURE CITED

Argue, A.W., Hilborn, R., Peterman, R.M., Staley, M.J., Walters, C.J., and Yorque, R. 1983. The Strait of Georgia chinook and coho fishery. Bull. Can. J. Fish. Aquat. Sci. 211: 91 p.

Beamish, R.J., Neville, C.-E.M., Thomson, B.L., Harrison, P.J., and St. John, M. 1994. A relationship between Fraser River discharge and interannual production of Pacific salmon and Pacific herring in the Strait of Georgia. Can. J. Fish. Aquat. Sci. 51: 2834-55.

Carter, E.W., and Zetterberg, P.R., 2010. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 2007. Can. Manuscr. Rep. Fish. Aquat. Sci. 2914: xiii + 125 p.

Collicutt, L.D., and Shardlow, T.F. 1990. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1989. Can. Manuscr. Rep. Fish. Aquat. Sci. 2087: 75 p.

Collicutt, L.D., and Shardlow, T.F. 1992. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1990. Can. Manuscr. Rep. Fish. Aquat. Sci. 2109: 76 p.

Collicutt, L.D., and Shardlow, T.F. 1993. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1991. Can. Manuscr. Rep. Fish Aquatic Sci. 2137: 77 p.

Cross, C.L., Lapi, L., and Perry, E.A. 1991. Production of chinook and coho salmon from British Columbia hatcheries, 1971 through 1989. Can. Tech. Rep. Fish. Aquat. Sci. 1816: 48 p.

DPA Consulting Ltd. 1982. Georgia Strait sport fishing creel survey 1980-81. Final Report, prepared for Department of Fisheries and Oceans, Pacific Region by DPA Consulting Limited, Vancouver B.C. 78 p.

English, K., Searing, G.F., and Nagtegaal, D.A. 2002. Review of the Strait of Georgia recreational creel survey, 1983-1999. Can Tech. Rep. Fish. Aquat. Sci. 2414: 81p.

Department of Fisheries and Oceans Canada (DFO). 2002. Toward an Inshore Rockfish Conservation Plan: A structure for continued consultation. 34p. DFO Vancouver, B.C.

Hardie, D.C., Nagtegaal, D.A., and Nagy, L. 1999. Strait of Georgia sport fishery and Northern Vancouver Island creel survey statistics for salmon and groundfish, 1998. Can. Manuscr. Rep. Fish. Aquat. Sci. 2500: 92 p.

Hardie, D.C., Nagtegaal, D.A., and Nagy, L. 2001. Strait of Georgia sport fishery and Northern Vancouver Island creel survey statistics for salmon and groundfish, 1999. Can. Manuscr. Rep. Fish. Aquat. Sci. 2553: 111 p.

Hardie, D.C., Nagtegaal, D.A., Hein, K., and Sturhahn, J. 2002. Strait of Georgia sport fishery and Northern Vancouver Island creel survey statistics for salmon and groundfish, 2000. Can. Manuscr. Rep. Fish. Aquat. Sci. 2608: 112 p.

Hardie, D.C., Nagtegaal, D.A., Sturhahn, J., and Hein, K. 2003. Strait of Georgia and Northern Vancouver Island sport fishery creel survey statistics for salmon and groundfish, 2001. Can. Manuscr. Rep. Fish. Aquat. Sci. 2640: 107 p.

Kuhn, B.R., Lapi, L., and Hamer, J.M. 1988. An Introduction to the Canadian Database on Marked Pacific Salmonids. Can. Tech. Rep. Fish. Aquat. Sci. 1649: 56 p.

MacLellan, S.E. 2004. Guide for sampling structures used in age determination of Pacific Salmon. Department of Fisheries and Oceans, Fisheries Research Branch, Pacific Biological Station, Nanaimo, B.C. 28 p.

McFarlane G.A., and King, J.R. 2001. The validity of the fin-ray method of age determination for lingcod (*Ophiodon elongatus*). 2001 Fish. Bull. 99: 459-464.

Shardlow, T.F., and Collicutt, L.D. 1989 a. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1984. Can. Manuscr. Rep. Fish. Aquat. Sci. 2032: 61 p.

Shardlow, T.F., and Collicutt, L.D. 1989 b. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1985. Can. Manuscr. Rep. Fish. Aquat. Sci. 2033: 60 p.

Shardlow, T.F., and Collicutt, L.D. 1989 c. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1986. Can. Manuscr. Rep. Fish. Aquat. Sci. 2034: 61 p.

Shardlow, T.F., and Collicutt, L.D. 1989 d. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1987. Can. Manuscr. Rep. Fish. Aquat. Sci. 2035: 62 p.

Shardlow, T.F., and Collicutt, L.D. 1989 e. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1988. Can. Manuscr. Rep. Fish. Aquat. Sci. 2036: 63 p.

TABLES

Table 1. Number of fishing interviews by month and PFMA and number of overflights in the Strait of Georgia (SG) creel survey, 2008.

Month	PFMA										Monthly Total	Monthly Overflights[1]
	13	14	15	16	17	18	19	20(SG)	28	29		
Jan	-	-	-	-	-	2	34	27	-	-	63	4
Feb	-	-	-	-	-	5	120	63	-	-	188	4
Mar	-	-	-	-	-	8	156	54	-	-	218	6
Apr	16	12	9	8	25	23	177	57	11	19	357	7
May	51	40	9	13	59	17	260	52	17	30	548	6
Jun	128	41	14	38	112	30	108	207	33	19	730	8
Jul	187	85	29	48	106	62	145	212	42	20	936	12
Aug	209	95	35	49	93	26	190	416	36	44	1193	10
Sep	151	132	20	47	43	7	180	272	56	41	949	10
Oct	212	9	4	5	15	4	156	58	18	5	486	10
Nov	-	-	-	-	-	3	153	41	-	-	197	4
Dec	-	-	-	-	-	4	101	11	-	-	116	4
Total	954	414	120	208	453	191	1780	1470	213	178	5981	85

[1]Number of monthly overflights represents flight sequences per departure inclusive of sub-regionally separated tandem flights.

Interviews showing in Area 18 outside the normal operating months are results of interviews conducted in Area 19 Sidney.

Table 2. Tidal effort (boat trips) and kept and released salmon catch estimates in the SG creel survey, 1984 to 2008[1].

Year	Effort	Kept					Released				
		Chinook	Coho	Sockeye	Pink	Chum	Chinook	Coho	Sockeye	Pink	Chum
1984	562113	315913	401628	-	8991	-	-	-	-	-	-
1985	549986	196888	670753	15	89764	-	-	-	-	-	-
1986	502334	146781	530345	873	3138	606	-	-	-	-	-
1987	506550	94351	602075	8491	89833	682	-	-	-	-	-
1988	561495	85370	947481	16271	8486	663	-	-	-	-	-
1989	515762	101365	447555	13345	122840	3329	170588	-	-	-	-
1990	477995	85967	581952	30606	11549	652	181348	-	-	-	-
1991	394285	98831	123571	23401	248971	888	150429	-	-	-	-
1992	397322	92725	505289	6745	19075	843	134651	-	-	-	-
1993	459112	109060	777072	23600	172713	1766	167960	-	-	-	-
1994	410939	61312	273624	14038	18453	289	133835	-	-	-	-
1995	294339	56829	72999	5897	183859	1481	107784	-	-	-	-
1996	280354	87856	127107	2365	7779	3469	176607	-	-	-	-
1997	249439	53730	98540	16819	111003	481	60794	-	-	-	-
1998	146931	18914	1833	4474	6848	3556	32506	20570	-	-	-
1999	150847	41500	310	491	26458	790	13043	6021	-	-	-
2000[2]	148070	27193	4296	6367	9762	1098	50755	34577	468	3710	41
2001[2]	179654	44314	13310	3252	118592	405	53182	121527	2083	37284	214
2002[2]	191141	66198	6357	5133	11950	597	58133	32689	3203	796	0
2003[2]	156670	34442	16226	2917	104556	910	24155	43653	377	25468	20
2004[2]	114262	36207	10410	3340	4527	8649	22307	35564	1438	834	1349
2005[2]	92117	27306	4789	6949	68479	4507	15199	21156	2619	23332	454
2006[2]	95153	26728	1766	29800	1594	2644	6853	4430	2034	301	11
2007[2]	96515	28665	4593	191	76560	416	32903	20302	2137	29485	0
2008[2]	77028	17936	1056	79	2256	508	9675	4961	228	515	0

[1]This table uses creel estimate values from May to September inclusively for historical comparisons.

[2]Data estimated using analysis approach of English et al. (2002).

Table 3. Tidal effort (boat trips) estimates, and kept and released catches estimates for not identified salmonids and Atlantic salmon for the SG Creel Survey, 2000 to 2008[1].

Year	Effort	Kept		Released	
		Not Identified Salmonids	Atlantic Salmon	Not Identified Salmonids	Atlantic Salmon
2000[2]	148070	0	0	44778	0
2001[2]	179654	337	0	39945	0
2002[2]	191141	26	0	12063	0
2003[2]	156670	63	0	9601	0
2004[2]	114262	79	0	16178	0
2005[2]	92117	0	0	6319	0
2006[2]	95153	165	0	3425	0
2007[2]	96515	25	0	3341	0
2008[2]	77028	21	0	2013	0

[1]This table uses creel estimate values from May to September inclusively for historical comparisons. Creel data for not identified salmonids and Atlantic salmon were not collected prior to 2000.

[2]Data estimated using analysis approach of English et al. (2002).

Table 4. Total effort, kept and released catch estimates of all salmon in the SG creel survey, 1984 to 2008[1].

Year	Effort	Total Salmon Kept	Total Salmon Released	Total Kept and Released
1984	562113	726532	-	726532
1985	549986	957420	-	957420
1986	502334	681743	-	681743
1987	506550	795432	-	795432
1988	561495	1058271	-	1058271
1989	515762	688434	170588	859022
1990	477995	710726	181348	892074
1991	394285	495662	150429	646091
1992	397322	624677	134651	759328
1993	459112	1084211	167960	1252171
1994	410939	367716	133835	501551
1995	294339	321065	107784	428849
1996	280354	228576	176607	405183
1997	249439	280573	60794	341367
1998	146931	35625	53076	88701
1999	150847	69549	19064	88613
2000[2]	148070	48716	134328	183044
2001[2]	179654	180211	254234	434445
2002[2]	191141	90261	106884	197145
2003[2]	156670	159115	103273	262388
2004[2]	114262	63213	77670	140884
2005[2]	92117	112030	69080	181110
2006[2]	95153	62698	17054	79753
2007[2]	96515	110450	88168	198618
2008[2]	77028	21855	17392	39247

[1]This table uses creel estimate values from May to September inclusively for historical comparisons.

[2]Data estimated using analysis approach of English et al. (2002).

Table 5. Salmon kept by month[4], effort, and species in the SG creel survey, 2008.

Month	Effort Est.	Effort SE[5]	Chin[1] Est.	Chin SE	Coho Est.	Coho SE	Sock[2] Est.	Sock SE	Pink Est.	Pink SE	Chum Est.	Chum SE	NO ID[3] Est.	NO ID SE	Total Monthly Kept	Total Monthly SE
Jan	1656	512	985	184	0	0	0	0	0	0	0	0	0	0	985	184
Feb	882	221	737	148	0	0	0	0	0	0	0	0	0	0	737	148
Mar	1470	174	275	72	0	0	0	0	0	0	0	0	0	0	275	72
Apr	2834	197	838	162	0	0	0	0	0	0	0	0	0	0	838	162
May	5382	496	329	76	0	0	0	0	0	0	0	0	0	0	329	76
Jun	10712	1782	2501	438	0	0	0	0	0	0	0	0	0	0	2501	438
Jul	19398	1011	5066	591	72	40	79	50	504	211	0	0	0	0	5721	630
Aug	25016	1397	6614	622	423	125	0	0	1695	403	127	50	21	22	8880	754
Sep	16521	1194	3426	444	561	136	0	0	57	23	381	95	0	0	4425	475
Oct	5416	429	406	102	92	39	0	0	0	0	2548	479	0	0	3046	491
Nov	1086	482	1109	360	0	0	0	0	0	0	6	9	0	0	1115	360
Dec	530	195	299	116	0	0	0	0	0	0	0	0	0	0	299	116
Total	90904	2942	22587	1171	1148	193	79	50	2256	456	3061	491	21	22	29151	1364

[1]Chin = Chinook

[2]Sock = Sockeye

[3]NO ID = unidentified salmon

[4]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

[5]SE = Standard Error

Table 6. Salmon released by month[4], effort, and species in the SG creel survey, 2008.

Month	Effort Est.	Effort SE	Chin[1] Est.	Chin SE	Coho Est.	Coho SE	Sock[2] Est.	Sock SE	Pink Est.	Pink SE	Chum Est.	Chum SE	NO ID[3] Est.	NO ID SE	Total Monthly Rel[5]	Total Monthly SE
Jan	1656	512	1330	429	0	0	0	0	0	0	0	0	0	0	1330	429
Feb	882	221	481	175	15	26	0	0	0	0	0	0	11	7	507	177
Mar	1470	174	203	70	0	0	0	0	0	0	0	0	0	0	203	70
Apr	2834	197	687	222	0	0	0	0	0	0	0	0	0	0	687	222
May	5382	496	296	69	0	0	0	0	0	0	0	0	0	0	296	69
Jun	10712	1782	1213	220	0	0	0	0	0	0	0	0	0	0	1213	220
Jul	19398	1011	1327	195	125	67	0	0	85	68	0	0	459	258	1996	337
Aug	25016	1397	4169	638	2072	370	188	62	173	77	0	0	307	115	6908	753
Sep	16521	1194	2669	438	2764	463	41	29	257	183	0	0	1247	443	6979	798
Oct	5416	429	505	137	502	188	0	0	22	22	369	234	1834	564	3232	654
Nov	1086	482	711	276	0	0	0	0	0	0	0	0	507	177	1219	328
Dec	530	195	118	80	0	0	0	0	0	0	0	0	230	243	348	255
Total	90904	2942	13710	1030	5478	626	228	69	538	211	369	234	4595	827	24918	1497

[1]Chin = Chinook

[2]Sock = Sockeye

[3]NO ID = unidentified salmon

[4]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

[5]Rel = Released

Table 7. Salmon kept by PFMA[4], effort, and species in the SG creel survey, 2008.

PFMA	Effort Est.	Effort SE	Chin[1] Est.	Chin SE	Coho Est.	Coho SE	Sock[2] Est.	Sock SE	Pink Est.	Pink SE	Chum Est.	Chum SE	NO ID[3] Est.	NO ID SE	Total Area Kept	Total Area SE
13	18547	813	4821	560	165	51	43	34	2156	453	2822	485	0	0	10006	870
14	7645	709	838	203	144	87	0	0	15	13	0	0	0	0	997	221
15	1591	193	338	116	0	0	0	0	0	0	2	2	0	0	340	116
16	3584	441	354	103	0	0	0	0	0	0	1	1	0	0	355	103
17	4748	245	565	102	2	2	0	0	0	0	0	0	0	0	567	102
18	2542	223	317	80	0	0	0	0	0	0	14	11	0	0	331	80
19	12520	859	2882	416	24	19	0	0	6	7	29	21	0	0	2943	417
20 (SG)	30839	2484	10885	863	684	153	36	37	78	48	192	73	21	22	11897	882
28	4948	338	856	177	105	55	0	0	0	0	0	0	0	0	961	186
29	3940	356	730	163	24	17	0	0	0	0	0	0	0	0	754	164
Total	90904	2942	22587	1171	1148	193	79	50	2256	456	3061	491	21	22	29151	1364

[1]Chin - Chinook

[2]Sock = Sockeye

[3]NO ID = unidentified salmon

[4]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Table 8. Salmon released by PFMA[4], effort, and species for the SG creel survey, 2008.

PFMA	Effort Est.	Effort SE	Chin[1] Est.	Chin SE	Coho Est.	Coho SE	Sock[2] Est.	Sock SE	Pink Est.	Pink SE	Chum Est.	Chum SE	NO ID[3] Est.	NO ID SE	Total Area Rel[5]	Total Area SE
13	18547	813	2325	241	2487	331	207	65	282	120	148	62	1162	317	6612	539
14	7645	709	1252	194	417	256	0	0	171	166	0	0	601	400	2441	539
15	1591	193	220	130	0	0	0	0	0	0	0	0	0	0	220	130
16	3584	441	367	132	0	0	0	0	0	0	0	0	52	49	419	141
17	4748	245	601	98	0	0	0	0	0	0	0	0	14	10	615	98
18	2542	223	118	31	0	0	0	0	0	0	0	0	14	11	132	32
19	12520	859	1943	473	46	33	0	0	0	0	0	0	421	164	2410	502
20 (SG)	30839	2484	3002	451	2222	429	21	22	86	51	221	226	2282	626	7834	913
28	4948	338	1083	305	275	178	0	0	0	0	0	0	33	34	1391	355
29	3940	356	2799	632	31	23	0	0	0	0	0	0	15	15	2845	633
Total	90904	2942	13710	1030	5478	626	228	69	538	211	369	234	4595	827	24918	1497

[1]Chin - Chinook

[2]Sock = Sockeye

[3]NO ID = unidentified salmon

[4]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

[5]Rel = Released

Table 9. Legal and sub-legal Chinook[1] kept and released by month[2], effort, and species in the SG creel survey, 2008.

Month	Effort Estimate	Effort SE	Chinook Kept Estimate	Chin. Kept SE	Legal Chinook Released Estimate	Legal Chin. Rel. SE	Sub-Legal Chinook Released Estimate	Sub-Legal Chinook Released SE	Total Monthly Chinook Released Estimate	Total Monthly Chinook Released SE
Jan	1656	512	985	184	151	80	1179	421	1330	429
Feb	882	221	737	148	19	17	462	174	481	175
Mar	1470	174	275	72	13	11	191	69	203	70
Apr	2834	197	838	162	66	17	620	221	687	222
May	5382	496	329	76	55	23	241	65	296	69
Jun	10712	1782	2501	438	73	41	1140	216	1213	220
Jul	19398	1011	5066	591	96	47	1231	189	1327	195
Aug	25016	1397	6614	622	222	110	3947	628	4169	638
Sep	16521	1194	3426	444	233	115	2437	423	2669	438
Oct	5416	429	406	102	45	26	460	134	505	137
Nov	1086	482	1109	360	241	125	471	246	711	276
Dec	530	195	299	116	5	2	114	80	118	80
Total	90904	2942	22587	1171	1219	231	12491	1004	13710	1030

[1]21 unidentified salmon were kept, and 4595 unidentified salmon were released in SG in 2008 and were not included.
[2]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Table 10. Legal and sub-legal Chinook[1] kept and released by PFMA[2], effort, and species in the SG creel survey, 2008.

PFMA	Effort Estimate	Effort SE	Chinook Kept Estimate	Chinook Kept SE	Legal Chinook Released Estimate	Legal Chin. Rel. SE	Sub-Legal Chinook Released Estimate	Sub-Legal Chin. Rel. SE	Total Area Chinook Released Estimate	Total Area Chinook Released SE
13	18547	813	4821	560	54	34	2271	239	2325	241
14	7645	709	838	203	21	15	1230	193	1252	194
15	1591	193	338	116	0	0	220	130	220	130
16	3584	441	354	103	0	0	367	132	367	132
17	4748	245	565	102	123	37	478	90	601	98
18	2542	223	317	80	72	23	46	21	118	31
19	12520	859	2882	416	300	103	1643	462	1943	473
20 (SG)	30839	2484	10885	863	542	179	2460	414	3002	451
28	4948	338	856	177	99	86	984	293	1083	305
29	3940	356	730	163	8	4	2791	632	2799	632
Total	90904	2942	22587	1171	1219	231	12491	1004	13710	1030

[1]21 unidentified salmon were kept, and 4595 unidentified salmon were released in SG in 2008 and were not included.
[2]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Table 11. Tidal effort estimates, and kept and released catch of groundfish group 1 (Lingcod, Dogfish, Halibut, Cabezon) in the SG creel survey, 1984 to 2008[1].

Year	Effort	Groundfish Kept				Groundfish Released				Groundfish Total			
		Lingcod	Halibut	Dogfish	Cabezon	Lingcod	Halibut	Dogfish	Cabezon	Lingcod	Halibut	Dogfish	Cabezon
1984	562113	121033	-	4485	-	-	-	-	-	121033	-	4485	-
1985	549986	70910	-	4336	-	-	-	-	-	70910	-	4336	-
1986	502334	65071	-	5108	-	-	-	-	-	65071	-	5108	-
1987	506550	56952	-	3741	-	-	-	-	-	56952	-	3741	-
1988	561495	59826	-	-	-	-	-	-	-	59826	-	-	-
1989	515762	45950	-	-	-	-	-	-	-	45950	-	-	-
1990	477995	30461	-	2249	-	-	-	-	-	30461	-	2249	-
1991	394285	7978	-	3324	-	-	-	-	-	7978	-	3324	-
1992	397322	5711	-	1677	-	-	-	-	-	5711	-	1677	-
1993	459112	6735	-	1893	-	-	-	-	-	6735	-	1893	-
1994	410939	6790	-	1244	-	-	-	-	-	6790	-	1244	-
1995	294339	4743	-	1873	-	-	-	-	-	4743	-	1873	-
1996	280354	3658	-	1498	-	-	-	-	-	3658	-	1498	-
1997	249439	3937	-	2528	-	-	-	-	-	3937	-	2528	-
1998	146931	3234	2125	-	-	-	-	-	-	3234	2125	-	-
1999	150847	3679	2391	-	-	-	-	-	-	3679	2391	-	-
2000[2]	148070	6082	454	1863	814	36434	47	41974	825	42516	501	43837	1639
2001[2]	179654	8769	305	1543	1905	62514	88	36297	982	71283	394	37840	2887
2002[2]	191141	3859	450	598	1326	60633	108	42609	750	64492	558	43207	2076
2003[2]	156670	249	682	1396	919	32401	74	36651	324	32650	756	38048	1243
2004[2]	114262	512	538	1082	659	22636	152	55757	318	23148	690	56839	977
2005[2]	92117	564	959	403	407	18680	34	22838	407	19244	992	23241	814
2006[2]	95153	4179	463	281	498	20044	25	29003	148	24223	488	29284	645
2007[2]	96515	2971	1603	332	425	14827	280	25810	136	17798	1883	26142	561
2008[2]	77028	3046	2143	557	288	15400	157	29703	145	18446	2300	30260	433

[1]This table uses creel estimate values from May to September inclusively for historical comparisons.

Groundfish groupings are arbitrary and for the purpose of representation only.

[2]Data estimated using analysis approach of English et al. (2002).

Table 12. Tidal effort estimates, and kept and released catch of groundfish group 2 (Greenling, English Sole, Rock Sole, Other Sole) in the SG creel survey, 2000 to 2008[1].

Year	Effort	Groundfish Kept				Groundfish Released				Groundfish Total			
		Green-ling	English Sole	Rock Sole	Other Sole	Green-ling	English Sole	Rock Sole	Other Sole	Green-ling	English Sole	Rock Sole	Other Sole
2000[2]	148070	4487	269	6615	51	5259	25	3497	246	9746	294	10112	297
2001[2]	179654	7702	115	13992	221	6174	1	4847	675	13876	116	18839	897
2002[2]	191141	5230	135	5540	6	6174	31	4601	403	11404	167	10142	409
2003[2]	156670	2029	1392	7944	0	4168	93	2595	43	6197	1485	10539	43
2004[2]	114262	1204	0	5940	0	7532	0	3040	0	8735	0	8980	0
2005[2]	92117	1571	432	2985	0	2932	0	4783	0	4502	432	7768	0
2006[2]	95153	4090	0	3153	0	6070	0	3188	53	10161	0	6341	53
2007[2]	96515	1923	0	4075	0	2924	0	2230	0	4847	0	6305	0
2008[2]	77028	3143	0	2666	0	2472	0	1572	130	5614	0	4238	130

[1]This table uses creel estimate values from May to September inclusively for historical comparisons.

[2]Data estimated using analysis approach of English et al. (2002).

Groundfish groupings are arbitrary and for the purpose of representation only. Creel data for groundfish group 2 were not collected prior to 2000.

Table 13. Tidal effort estimates, and kept and released catch of groundfish group 3 (Pacific Cod, Pacific Tomcod, Flounder, Starry Flounder) in the SG creel survey, 2000 to 2008[1].

Year	Effort	Groundfish Kept				Groundfish Released				Groundfish Total			
		Pacific Cod	Pacific Tomcod	Flounder	Starry Flounder	Pacific Cod	Pacific Tomcod	Flounder	Starry Flounder	Pacific Cod	Pacific Tomcod	Flounder	Starry Flounder
2000[2]	148070	0	0	0	13310	0	0	0	3952	0	0	0	17262
2001[2]	179654	0	0	0	10660	0	0	0	3591	0	0	0	14251
2002[2]	191141	0	0	74	4039	0	0	0	1378	0	0	74	5417
2003[2]	156670	805	8	16756	7330	154	88	441	997	959	96	17197	8327
2004[2]	114262	0	6	0	1547	57	0	0	667	57	6	0	2214
2005[2]	92117	0	0	0	495	52	0	0	179	52	0	0	674
2006[2]	95153	0	0	0	2021	201	0	0	576	201	0	0	2597
2007[2]	96515	0	0	0	1470	0	0	0	1102	0	0	0	2573
2008[2]	77028	0	0	0	2759	13	0	21	811	13	0	21	3571

[1]This table uses creel estimate values from May to September inclusively for historical comparisons.

[2]Data estimated using analysis approach of English et al. (2002).

Groundfish groupings are arbitrary and for the purpose of representation only. Creel data for groundfish group 3 were not collected prior to 2000.

Table 14. Tidal effort estimates, and kept and released catch of groundfish group 4 (Ratfish, Skates, and other groundfish) in the SG creel survey, 2000 to 2008[1].

Year	Effort	Groundfish Kept			Groundfish Released			Groundfish Total		
		Ratfish	Skates	Other Groundfish[3]	Ratfish	Skates	Other Groundfish[3]	Ratfish	Skates	Other Groundfish[3]
2000[2]	148070	0	0	182	698	0	2047	698	0	2229
2001[2]	179654	10	0	880	200	0	3501	210	0	4381
2002[2]	191141	0	0	512	2191	0	5031	2191	0	5542
2003[2]	156670	0	8	797	597	149	1709	597	157	2505
2004[2]	114262	15	0	1425	541	23	265	556	23	1691
2005[2]	92117	0	0	0	441	49	418	441	49	418
2006[2]	95153	0	0	406	18	0	552	18	0	958
2007[2]	96515	0	6	1479	122	9	4273	122	15	5752
2008[2]	77028	0	5	367	121	0	1156	121	5	1523

[1]This table uses creel estimate values from May to September inclusively for historical comparisons.

[2]Data estimated using analysis approach of English et al. (2002).

[3]See Appendix G for a description of species or groups included in Other Groundfish.
Groundfish groupings are arbitrary and for the purpose of representation only. Creel data for groundfish group 4 were not collected prior to 2000.

Table 15. Tidal effort estimates, and kept and released catch of rockfish group 1 (China, Copper, Quillback and Tiger Rockfish) in the SG creel survey, 2000 to 2008[1].

Year	Effort	Rockfish Kept				Rockfish Released				Rockfish Total			
		China	Copper	Quillback	Tiger	China	Copper	Quillback	Tiger	China	Copper	Quillback	Tiger
2000[2]	148070	160	9738	28866	43	24	1788	5033	0	184	11526	33899	43
2001[2]	179654	12	18485	27055	121	83	9077	5412	4	95	27562	32467	125
2002[2]	191141	0	10753	11336	262	6	7738	7720	26	6	18492	19056	287
2003[2]	156670	126	6446	5538	38	13	2229	7939	28	139	8675	13477	66
2004[2]	114262	237	2508	3308	156	101	4549	6523	0	338	7057	9831	156
2005[2]	92117	0	3044	1947	0	7	1637	3698	1	7	4681	5645	1
2006[2]	95153	603	4175	2685	29	623	4179	3596	81	1225	8354	6281	109
2007	96515	138	2176	2842	151	23	2556	4341	0	161	4732	7182	151
2008[2]	77028	36	1088	2297	0	89	1173	4241	0	125	2261	6537	0

[1]This table uses all estimate values from May to September inclusively for historical comparisons.

Rockfish groupings are arbitrary and for the purpose of representation only. Creel data for rockfish group 1 were not collected prior to 2000.

[2]Data estimated using analysis approach of English et al. (2002).

Table 16. Tidal effort estimates, and kept and released catch of rockfish group 2 (Black, Canary, Redstripe and Yelloweye Rockfish) in the SG creel survey, 2000 to 2008[1].

Year	Effort	Rockfish Kept				Rockfish Released				Rockfish Total			
		Black	Canary	Red stripe	Yellow eye	Black	Canary	Red stripe	Yellow eye	Black	Canary	Red stripe	Yellow eye
2000[2]	148070	237	333	26	3796	82	30	0	247	319	363	26	4043
2001[2]	179654	666	2365	64	7265	897	0	0	279	1563	2365	64	7543
2002[2]	191141	0	131	136	2772	0	0	0	367	0	131	136	3139
2003[2]	156670	227	119	185	3103	83	176	0	100	310	295	185	3203
2004[2]	114262	278	19	0	2722	153	113	0	110	431	132	0	2832
2005[2]	92117	115	84	0	648	79	112	0	310	194	195	0	958
2006[2]	95153	199	169	8	713	0	24	69	880	199	194	76	1593
2007[2]	96515	258	30	0	316	288	4	24	61	547	35	24	377
2008[2]	77028	77	25	0	686	5	0	0	148	82	25	0	834

[1]This table uses all estimate values from May to September inclusively for historical comparisons.

Rockfish groupings are arbitrary and for the purpose of representation only.

[2]Data estimated using analysis approach of English et al. (2002).

Table 17. Tidal effort estimates, and kept and released catch of rockfish group 3 (Yellowtail and Other Rockfish) in the SG creel survey, 2000 to 2008[1].

Year	Effort	Rockfish Kept		Rockfish Released		Rockfish Total	
		Yellowtail	Other Rockfish[3]	Yellowtail	Other Rockfish[3]	Yellowtail	Other Rockfish
2000[2]	148070	10	4871	0	21590	10	26461
2001[2]	179654	178	4367	0	26212	178	30579
2002[2]	191141	106	614	167	17219	273	17833
2003[2]	156670	81	290	402	11548	482	11837
2004[2]	114262	314	454	24	8269	338	8723
2005[2]	92117	227	393	21	10338	248	10732
2006[2]	95153	101	1201	13	10831	114	12032
2007[2]	96515	63	783	18	10259	81	11042
2008[2]	77028	45	780	0	8971	45	9751

[1]This table uses all estimate values from May to September inclusively for historical comparisons.

Rockfish groupings are arbitrary and for the purpose of representation only.

Creel data for rockfish group 3 were not collected prior to 2000.

[2]Data estimated using analysis approach of English et al. (2002).

[3]See Appendix G for a description of rockfish species included in Other Rockfish.

Table 18. Groundfish kept by month[2], effort, and species in the SG creel survey, 2008.

Month	Effort Est.	Effort SE	Halibut Est.	Halibut SE	Ling-cod Est.	Ling-cod SE	Dog-fish Est.	Dog-fish SE	Rock Sole Est.	Rock Sole SE	Green-ling Est.	Green-ling SE	Starry Flounder Est.	Star. Floun. SE	Other Ground-fish[1] Est.	Other GF SE	Total Monthly Kept Est.	Total Monthly Kept SE
Jan	1656	512	0	0	0	0	0	0	0	0	136	135	0	0	15	15	151	136
Feb	882	221	5	5	10	10	0	0	0	0	4	4	0	0	0	0	20	11
Mar	1470	174	177	49	3	2	0	0	3	2	150	94	3	2	3	2	338	106
Apr	2834	197	207	47	0	0	0	0	88	42	41	26	177	24	9	6	521	72
May	5382	496	513	111	0	0	2	2	311	161	40	18	676	443	27	14	1568	485
Jun	10712	1782	249	91	363	85	48	37	456	255	762	314	37	20	38	27	1955	426
Jul	19398	1011	684	212	824	279	171	72	1106	382	764	274	347	141	103	55	3999	609
Aug	25016	1397	165	59	1015	201	319	122	674	491	926	442	1468	621	427	183	4994	956
Sep	16521	1194	532	142	844	168	17	20	120	45	651	239	231	221	216	93	2610	407
Oct	5416	429	411	135	16	8	0	0	0	0	10	5	0	0	17	11	454	136
Nov	1086	482	0	0	0	0	0	0	0	0	1	2	0	0	0	0	1	2
Dec	530	195	8	11	0	0	0	0	8	11	0	0	0	0	0	0	16	16
Total	90904	2942	2951	335	3075	393	557	148	2765	694	3486	674	2939	807	854	216	16627	1386

[1]See Appendix G for a description of identified species included in Other Groundfish.

[2]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Table 19. Groundfish released by month[3], effort, and species in the SG creel survey, 2008.

Month	Effort Est.	Effort SE	Halibut Est.	Halibut SE	Ling-cod Est.	Ling-cod SE	Dog-fish Est.	Dog-fish SE	Rock Sole Est.	Rock Sole SE	Green-ling Est.	Green-ling SE	Starry Flounder Est.	Star. Floun. SE	Other Ground-fish[1] Est.	Other GF SE	Effort Est.	Effort SE	Total Monthly Rel.[2] Est.	Total Monthly Rel. SE
Jan	1656	512	0	0	0	0	15	15	103	105	0	0	0	0	0	0	0	0	118	106
Feb	882	221	0	0	0	0	36	22	0	0	0	0	0	0	0	0	0	0	36	22
Mar	1470	174	16	19	38	16	96	41	970	290	1	1	139	94	16	14	21	20	1298	310
Apr	2834	197	0	0	97	52	460	115	558	135	0	0	30	15	0	0	20	16	1166	186
May	5382	496	15	12	154	79	863	217	2105	571	0	0	88	82	97	54	89	34	3411	625
Jun	10712	1782	4	4	221	94	2316	413	2934	870	366	124	700	355	26	22	61	34	6628	1039
Jul	19398	1011	60	44	408	190	4213	686	7351	977	755	259	649	232	153	82	873	294	14463	1295
Aug	25016	1397	75	40	224	90	4828	775	13638	1835	301	106	570	174	398	210	365	119	20398	2019
Sep	16521	1194	4	3	109	56	2063	306	3676	839	150	84	464	174	137	57	461	233	7063	946
Oct	5416	429	9	10	36	22	229	93	2099	806	14	11	66	59	5	5	89	32	2548	815
Nov	1086	482	22	27	0	0	163	92	17	14	40	27	11	11	0	0	76	47	330	112
Dec	530	195	8	11	51	71	109	81	8	11	0	0	0	0	0	0	1	0	176	109
Total	90904	2942	212	71	1339	266	15393	1192	33458	2621	1627	319	2718	510	832	240	2056	401	57635	2991

[1]See Appendix G for a description of identified species included in Other Groundfish.

[2]Rel. = Released

[3]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Table 20. Groundfish kept by PFMA[2], effort, and species in the SG creel survey, 2008.

PFMA	Effort Est.	Effort SE	Halibut Est.	Halibut SE	Ling-cod Est.	Ling-cod SE	Dog-fish Est.	Dog-fish SE	Rock Sole Est.	Rock Sole SE	Green-ling Est.	Green-ling SE	Starry Flounder Est.	Starry Flounder SE	Other Ground-fish[1] Est.	Other Ground-fish SE	Total Area Kept Est.	Total Area Kept SE
13	18547	813	98	50	762	270	0	0	10	13	56	59	20	19	434	187	1381	338
14	7645	709	17	9	190	80	0	0	199	147	44	32	384	254	69	47	903	310
15	1591	193	0	0	148	48	0	0	21	15	150	109	0	0	0	0	319	120
16	3584	441	0	0	646	172	178	57	345	249	161	49	434	311	0	0	1763	440
17	4748	245	0	0	384	73	66	59	609	294	97	33	0	0	4	4	1160	310
18	2542	223	0	0	194	116	0	0	359	131	32	19	0	0	97	52	683	183
19	12520	859	2443	306	290	86	90	51	122	70	1241	328	5	3	205	76	4396	471
20 (SG)	30839	2484	392	124	367	125	129	105	555	479	1705	571	18	19	42	34	3208	775
28	4948	338	0	0	95	29	67	24	219	144	0	0	1839	682	1	1	2220	699
29	3940	356	0	0	0	0	27	31	326	198	0	0	238	156	2	2	594	253
Total	90904	2942	2951	335	3075	393	557	148	2765	694	3486	674	2939	807	854	216	16627	1386

[1]See Appendix G for a description of identified species included in Other Groundfish.

[2]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Table 21. Groundfish released by PFMA[3], effort, and species in the SG creel survey, 2008.

PFMA	Effort Est.	Effort SE	Halibut Est.	Halibut SE	Legal Ling-cod Est.	Legal Ling-cod SE	Sub-legal Ling-cod Est.	Sub-legal Ling-cod SE	Dog-fish Est.	Dog-fish SE	Rock Sole Est.	Rock Sole SE	Green-ling Est.	Green-ling SE	Starry Flound-er Est.	Starry Flound-er SE	Other Ground-fish[1] Est.	Other Ground-fish SE	Total Area Rel.[2] Est.	Total Area Rel. SE
13	18547	813	0	0	16	11	1983	429	0	0	0	0	148	65	0	0	566	263	2712	507
14	7645	709	0	0	84	70	1189	467	886	223	440	177	39	18	53	31	544	250	3235	606
15	1591	193	0	0	18	21	677	160	170	54	70	38	0	0	17	14	0	0	952	175
16	3584	441	0	0	248	176	2805	659	878	260	198	92	0	0	476	221	0	0	4606	768
17	4748	245	0	0	210	60	1481	212	797	154	333	107	96	37	4	3	34	18	2956	292
18	2542	223	13	7	140	47	781	207	1329	203	414	213	29	13	45	35	45	26	2797	366
19	12520	859	117	51	54	17	1724	243	15013	1648	31	26	701	211	74	31	462	91	18175	1683
20 (SG)	30839	2484	83	48	478	153	4396	634	14140	1990	55	33	1621	450	149	71	405	142	21326	2149
28	4948	338	0	0	68	65	342	96	167	74	45	31	60	77	10	12	0	0	691	161
29	3940	356	0	0	24	24	13	8	78	48	42	29	24	29	4	4	0	0	185	68
Total	90904	2942	212	71	1339	266	15393	1192	33458	2621	1627	319	2718	510	832	240	2056	401	57635	2991

[1]See Appendix G for a description of identified species included in Other Groundfish.

[2]Rel. = Released

[3]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Table 22. Rockfish kept by month[2], effort, and species in the SG creel survey, 2008.

Month	Effort Est.	Effort SE	Black Est.	Black SE	Canary Est.	Canary SE	China Est.	China SE	Copper Est.	Copper SE	Quill-back Est.	Quill-Back SE
Jan	1656	512	0	0	0	0	0	0	0	0	0	0
Feb	882	221	0	0	0	0	0	0	0	0	0	0
Mar	1470	174	0	0	0	0	0	0	0	0	8	7
Apr	2834	197	0	0	0	0	0	0	0	0	9	9
May	5382	496	0	0	0	0	0	0	0	0	183	147
Jun	10712	1782	0	0	0	0	0	0	155	65	231	88
Jul	19398	1011	0	0	25	16	0	0	526	165	563	145
Aug	25016	1397	23	22	0	0	16	12	279	92	673	212
Sep	16521	1194	54	58	0	0	20	14	128	50	646	161
Oct	5416	429	0	0	0	0	0	0	10	7	0	0
Nov	1086	482	0	0	0	0	0	0	0	0	0	0
Dec	530	195	0	0	0	0	0	0	0	0	0	0
Total	90904	2942	77	62	25	16	36	19	1098	206	2314	348

Rockfish kept by month (cont'd)

Month	Red-stripe Est.	Red-stripe SE	Tiger Est.	Tiger SE	Yellow-eye Est.	Yellow-eye SE	Yellow-tail Est.	Yellow-tail SE	Other Rockfish[1] Est.	Other Rockfish SE	Total Monthly Kept Est.	Total Monthly Kept SE
Jan	0	0	0	0	0	0	0	0	44	52	44	52
Feb	0	0	0	0	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	0	0	68	47	76	48
Apr	0	0	0	0	0	0	0	0	0	0	9	9
May	0	0	0	0	0	0	0	0	35	14	218	147
Jun	0	0	0	0	64	34	0	0	67	38	516	121
Jul	0	0	0	0	108	44	18	13	276	92	1515	243
Aug	0	0	0	0	376	107	0	0	230	61	1597	263
Sep	0	0	0	0	138	41	27	29	172	84	1186	203
Oct	0	0	0	0	0	0	5	5	23	15	38	17
Nov	0	0	0	0	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	686	127	50	32	915	161	5200	459

[1]See Appendix G for a description of rockfish species included in Other Rockfish.
[2]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Table 23. Rockfish released by month[2], effort, and species in the SG creel survey, 2008.

Month	Effort Est.	Effort SE	Black Est.	Black SE	Canary Est.	Canary SE	China Est.	China SE	Copper Est.	Copper SE	Quillback Est.	Quillback SE
Jan	1656	512	0	0	0	0	0	0	0	0	0	0
Feb	882	221	0	0	0	0	0	0	0	0	4	3
Mar	1470	174	0	0	0	0	0	0	3	2	38	25
Apr	2834	197	0	0	0	0	15	13	641	239	130	61
May	5382	496	0	0	0	0	0	0	26	11	329	251
Jun	10712	1782	0	0	0	0	0	0	395	112	491	137
Jul	19398	1011	0	0	0	0	0	0	461	171	939	223
Aug	25016	1397	5	5	0	0	82	41	276	115	1261	413
Sep	16521	1194	0	0	0	0	7	9	15	11	1221	343
Oct	5416	429	0	0	0	0	0	0	0	0	5	5
Nov	1086	482	0	0	0	0	0	0	0	0	6	9
Dec	530	195	0	0	0	0	0	0	0	0	0	0
Total	90904	2942	5	5	0	0	103	44	1818	335	4424	652

Rockfish released by month (cont'd)

Month	Red-stripe Est.	Red-stripe SE	Tiger Est.	Tiger SE	Yellow-eye Est.	Yellow-eye SE	Yellow-tail Est.	Yellow-tail SE	Other Rockfish[1] Est.	Other Rockfish SE	Total Monthly Rel[3] Est.	Total Monthly Rel. SE
Jan	0	0	0	0	0	0	0	0	97	80	97	80
Feb	0	0	0	0	0	0	0	0	25	11	29	12
Mar	0	0	0	0	0	0	0	0	60	33	101	41
Apr	0	0	0	0	0	0	0	0	281	97	1067	265
May	0	0	0	0	70	76	0	0	703	199	1127	330
Jun	0	0	0	0	2	2	0	0	1700	337	2588	381
Jul	0	0	0	0	20	14	0	0	2731	639	4152	699
Aug	0	0	0	0	47	25	0	0	2266	323	3937	539
Sep	0	0	0	0	8	8	0	0	1571	337	2823	482
Oct	0	0	0	0	0	0	0	0	208	91	212	92
Nov	0	0	0	0	0	0	0	0	166	68	172	68
Dec	0	0	0	0	0	0	0	0	43	49	43	49
Total	0	0	0	0	148	82	0	0	9851	901	16349	1165

[1]See Appendix G for a description of rockfish species included in Other Rockfish.
[2]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[3]Rel = Released

Table 24. Rockfish kept by PFMA[2], effort, and species in the SG creel survey, 2008.

PFMA	Effort Est.	Effort SE	Black Est.	Black SE	Canary Est.	Canary SE	China Est.	China SE	Copper Est.	Copper SE	Quill-back Est.	Quill-back SE
13	18547	813	0	0	0	0	0	0	28	20	177	78
14	7645	709	0	0	0	0	0	0	19	13	19	10
15	1591	193	0	0	0	0	0	0	0	0	210	82
16	3584	441	0	0	0	0	16	14	52	49	997	272
17	4748	245	0	0	25	16	0	0	205	64	176	53
18	2542	223	0	0	0	0	0	0	75	35	18	8
19	12520	859	2	3	0	0	20	12	344	123	202	59
20 (SG)	30839	2484	75	62	0	0	0	0	248	93	511	166
28	4948	338	0	0	0	0	0	0	119	101	2	2
29	3940	356	0	0	0	0	0	0	8	7	1	1
Total	90904	2942	77	62	25	16	36	19	1098	206	2314	348

Rockfish kept by PFMA (cont'd)

PFMA	Red-stripe Est.	Red-stripe SE	Tiger Est.	Tiger SE	Yellow-eye Est.	Yellow-eye SE	Yellow-tail Est.	Yellow-tail SE	Other Rockfish[1] Est.	Other Rockfish SE	Total Area Kept Est.	Total Area kept SE
13	0	0	0	0	42	31	0	0	11	11	258	87
14	0	0	0	0	88	43	0	0	80	57	206	73
15	0	0	0	0	128	41	0	0	24	16	362	93
16	0	0	0	0	349	103	0	0	13	12	1427	296
17	0	0	0	0	68	33	0	0	280	81	754	122
18	0	0	0	0	0	0	18	13	121	49	232	62
19	0	0	0	0	11	8	5	5	142	58	726	150
20 (SG)	0	0	0	0	0	0	27	29	245	99	1106	225
28	0	0	0	0	0	0	0	0	0	0	121	101
29	0	0	0	0	0	0	0	0	0	0	8	7
Total	0	0	0	0	686	127	50	32	915	161	5200	459

[1]See Appendix G for a description of rockfish species included in Other Rockfish.

[2]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Table 25. Rockfish released by PFMA[2], effort, and species in the SG creel survey, 2008.

PFMA	Effort Est.	Effort SE	Black Est.	Black SE	Canary Est.	Canary SE	China Est.	China SE	Copper Est.	Copper SE	Quill-back Est.	Quill-back SE
13	18547	813	0	0	0	0	0	0	0	0	48	26
14	7645	709	0	0	0	0	0	0	14	15	54	31
15	1591	193	0	0	0	0	0	0	0	0	266	81
16	3584	441	0	0	0	0	49	35	34	16	2901	572
17	4748	245	0	0	0	0	0	0	1174	262	407	120
18	2542	223	0	0	0	0	0	0	571	208	136	63
19	12520	859	5	5	0	0	55	27	25	19	210	55
20 (SG)	30839	2484	0	0	0	0	0	0	0	0	136	87
28	4948	338	0	0	0	0	0	0	0	0	189	231
29	3940	356	0	0	0	0	0	0	0	0	77	86
Total	90904	2942	5	5	0	0	103	44	1818	335	4424	652

Rockfish released by PFMA (cont'd)

PFMA	Red-stripe	SE	Tiger	SE	Yellow-eye	SE	Yellow-tail	SE	Other Rockfish[1]	SE	Total Area Rel[3]	Total Area SE
13	0	0	0	0	0	0	0	0	1810	370	1858	370
14	0	0	0	0	4	3	0	0	1946	567	2018	568
15	0	0	0	0	23	18	0	0	0	0	289	83
16	0	0	0	0	35	19	0	0	19	16	3037	574
17	0	0	0	0	16	13	0	0	1023	183	2621	341
18	0	0	0	0	0	0	0	0	957	283	1663	357
19	0	0	0	0	0	0	0	0	1604	276	1899	283
20 (SG)	0	0	0	0	70	76	0	0	2492	405	2698	421
28	0	0	0	0	0	0	0	0	0	0	189	231
29	0	0	0	0	0	0	0	0	0	0	77	86
Total	0	0	0	0	148	82	0	0	9851	901	16349	1165

[1]See Appendix G for a description of rockfish species included in Other Rockfish.

[2]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

[3]Rel = Released

Table 26. Groundfish Catch Summary in the SG creel survey, 2008.

Groundfish Species	Catch	% of Total Groundfish Catch	Major Catch PFMA
Halibut (*Hippoglossus stenolepis)*	2,951	13.5%	19
Lingcod (*Ophiodon elongatus*)	3,075	14.1%	13
Rockfish (*Sebastes* spp.)	5,200	23.8%	16
Other groundfish	10,601	48.6%	20(SG)
Total	**21,827**	**100%**	

Table 27. Rockfish Catch Summary in the SG creel survey, 2008.

Rockfish Species	Catch	% of Total Groundfish Catch	Major Catch PFMA
Copper (*Sebastes caurinus)*	1098	21.1%	19
Quillback (*Sebastes maliger*)	2314	44.5%	16
Other (*Sebastes* spp.)	1788	34.4%	16 and 17
Total	**5200**	**100%**	

Table 28. Number of adipose-clipped Chinook observed by month[1] and region in the SG creel survey, 2008.

Month		North Gulf	South Gulf	Victoria	Total
Jan	Unmarked	0	0	39	39
to	Marked	0	2	78	80
Mar	Total	0	2	117	119
	Unmarked	9	12	4	25
Apr	Marked	0	7	14	21
	Total	9	19	18	46
	Unmarked	7	12	5	24
May	Marked	0	1	3	4
	Total	7	13	8	28
	Unmarked	48	7	39	94
Jun	Marked	1	1	3	5
	Total	49	8	42	99
	Unmarked	81	31	36	148
Jul	Marked	7	8	18	33
	Total	88	39	54	181
	Unmarked	47	23	93	163
Aug	Marked	5	1	9	15
	Total	52	24	102	178
	Unmarked	27	17	46	90
Sep	Marked	3	1	23	27
	Total	30	18	69	117
	Unmarked	0	3	12	15
Oct	Marked	0	1	18	19
	Total	0	4	30	34
Nov	Unmarked	0	0	37	37
to	Marked	0	0	102	102
Dec	Total	0	0	139	139
	Unmarked	219	105	311	635
Total	Marked	16	22	268	306
	Total	235	127	579	941

[1]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Table 29. Number of adipose-clipped Coho observed by month[1] and region in the SG creel survey, 2008.

Month		North Gulf	South Gulf	Victoria	Total
Jan	Unmarked	0	0	0	0
to	Marked	0	0	0	0
Mar	Total	0	0	0	0
	Unmarked	0	0	0	0
Apr	Marked	0	0	0	0
	Total	0	0	0	0
	Unmarked	0	0	0	0
May	Marked	0	0	0	0
	Total	0	0	0	0
	Unmarked	0	0	0	0
Jun	Marked	0	0	0	0
	Total	0	0	0	0
	Unmarked	0	0	0	0
Jul	Marked	0	0	3	3
	Total	0	0	3	3
	Unmarked	0	0	1	1
Aug	Marked	1	0	4	5
	Total	1	0	5	6
	Unmarked	3	0	5	8
Sep	Marked	5	2	4	11
	Total	8	2	9	19
	Unmarked	0	0	3	3
Oct	Marked	3	0	1	4
	Total	3	0	4	7
Nov	Unmarked	0	0	0	0
to	Marked	0	0	0	0
Dec	Total	0	0	0	0
	Unmarked	3	0	9	12
Total	Marked	9	2	12	23
	Total	12	2	21	35

[1]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Table 30. Origin of coded-wire tagged Chinook caught in the SG creel survey, 2008.

Origin	Country	Total	Percent
SHUSWAP R LOW	CAN	14	8.6%
COWICHAN R	CAN	12	7.4%
PUNTLEDGE R	CAN	11	6.7%
CHILLIWACK R	CAN	10	6.1%
BIG QUALICUM R	CAN	9	5.5%
HARRISON R	CAN	9	5.5%
QUINSAM R	CAN	6	3.7%
NICOLA R	CAN	5	3.1%
NANAIMO R	CAN	3	1.8%
CHEMAINUS R	CAN	2	1.2%
DOME CR	CAN	2	1.2%
ROBERTSON CR	CAN	2	1.2%
PHILLIPS R/JNST	CAN	1	0.6%
WOSS R	CAN	1	0.6%
SKAGIT R	USA	16	9.8%
SAMISH (FRIDAY CR)	USA	9	5.5%
SKYKOMISH R	USA	8	4.9%
STILLAGUAMISH R -NF	USA	6	3.7%
GEORGE ADAMS (PURDY)	USA	5	3.1%
NOOKSACK -SF	USA	5	3.1%
BIG SOOS CR	USA	4	2.5%
VOIGHT CR	USA	4	2.5%
CHAMBERS CR	USA	2	1.2%
CLACKAMAS R EARLY	USA	2	1.2%
MINTER CR	USA	2	1.2%
NOOKSACK R	USA	2	1.2%
WASHINGTON UNKNOWN	USA	2	1.2%
BONNEVILLE LADDER	USA	1	0.6%
CLEAR CR	USA	1	0.6%
DESCHUTES R	USA	1	0.6%
ELOCHOMAN R	USA	1	0.6%
FINCH CR	USA	1	0.6%
HOKO R	USA	1	0.6%
KALAMA R	USA	1	0.6%
SNAKE R-LOWR	USA	1	0.6%
WASHOUGAL R	USA	1	0.6%
	TOTAL	163	100.0%

Table 31. Monthly[2] number and percent age[1] composition of Chinook sampled for age in the SG creel survey, 2008.

Month	Age 2		Age 3		Age 4		Age 5		Age 6		Total Sampled
	n	%	n	%	n	%	n	%	n	%	
Jan - Mar	1	1.9%	17	31.5%	36	66.7%	0	0.0%	0	0.0%	54
Apr	0	0.0%	18	64.3%	9	32.1%	1	3.6%	0	0.0%	28
May	0	0.0%	16	88.9%	2	11.1%	0	0.0%	0	0.0%	18
Jun	0	0.0%	50	57.5%	36	41.4%	1	1.1%	0	0.0%	87
Jul	1	0.7%	104	74.3%	33	23.6%	2	1.4%	0	0.0%	140
Aug	1	0.9%	34	30.6%	59	53.2%	17	15.3%	0	0.0%	111
Sep	2	2.7%	58	77.3%	11	14.7%	4	5.3%	0	0.0%	75
Oct	1	11.1%	7	77.8%	1	11.1%	0	0.0%	0	0.0%	9
Nov - Dec	4	11.1%	32	88.9%	0	0.0%	0	0.0%	0	0.0%	36
Total	10		336		187		25		0		558
Overall age composition of catch	1.8%		60.2%		33.5%		4.5%		0.0%		

[1]For the purposes of this report, age is defined as the year of life caught based on the Gilbert-Rich age.
[2]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Table 32. Monthly[2] estimated catches at age[1] of Chinook in the SG creel survey, 2008.

Month	Age 2	Age 3	Age 4	Age 5	Age 6	Total
Jan - Mar	37	629	1332	0	0	1997
Apr	0	539	269	30	0	838
May	0	293	37	0	0	329
Jun	0	1437	1035	29	0	2501
Jul	36	3763	1194	72	0	5066
Aug	60	2026	3516	1013	0	6614
Sep	91	2649	502	183	0	3426
Oct	45	316	45	0	0	406
Nov - Dec	157	1252	0	0	0	1409
Total	426	12904	7930	1327	0	22587
Annual Percentage	1.8%	60.2%	33.5%	4.5%	0.0%	100%

[1]For the purposes of this report, age is defined as the year of life caught based on the Gilbert-Rich age.

[2]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Table 33. Monthly[2] mean nose-fork length (L) at age[1] of Chinook sampled in the SG creel survey, 2008.

Month	Age 2		Age 3		Age 4		Age 5		Age 6		Total Sampled
	n	L (mm)	n	L (mm)	n	L (mm)	n	L (mm)	n	L (mm)	
Jan - Mar	1	530	16	583	26	647	0	-	0	-	43
Apr	0	-	15	689	7	697	0	-	0	-	22
May	0	-	14	676	1	940	0	-	0	-	15
Jun	0	-	37	710	32	817	0	-	0	-	69
Jul	0	-	84	728	23	825	2	950	0	-	109
Aug	1	505	27	729	47	843	14	921	0	-	89
Sep	2	550	52	715	10	827	1	830	0	-	65
Oct	1	530	6	655	1	740	0	-	0	-	8
Nov - Dec	4	533	30	653	0	-	0	-	0	-	34
Total Samples/Mean	9	533	281	701	147	792	17	919	0	-	454

[1]For the purposes of this report, age is defined as the year of life caught based on the Gilbert-Rich age.

[2]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Table 34. Percent age[1] composition of Chinook in the SG creel survey, 1984 to 2008.

Catch Year	2	3	4	5+	Reference
1984	21.6	67.3	9.4	1.7	Shardlow and Collicutt (1989a)
1985	6.6	70.8	20.6	2	Shardlow and Collicutt (1989b)
1986	10.9	44.9	40.4	3.8	Shardlow and Collicutt (1989c)
1987	7.8	62.1	25	5.2	Shardlow and Collicutt (1989d)
1988	26.4	35.3	35.4	2.8	Shardlow and Collicutt (1989e)
1989	3.1	83.3	10.5	3.1	Collicutt and Shardlow (1990)
1990	4	37	53	6	Hardie et al. (1999)
1991	2	67	25	6	Hardie et al. (1999)
1992	7	58	28	7	Hardie et al. (1999)
1993	1	69	26	4	Hardie et al. (1999)
1994	2	50	40	8	Hardie et al. (1999)
1995	2	62	29	7	Hardie et al. (1999)
1996	1	70	26	3	Hardie et al. (1999)
1997	0	66	29	5	Hardie et al. (1999)
1998	5	31	55	9	Hardie et al. (1999)
1999	0.3	73.4	21.4	4.9	Hardie et al. (2001)
2000	2.2	56.6	35	6.2	Hardie et al. (2002)
2001	1.4	59	32.8	4.4	Hardie et al. (2003)
2002	2.1	53.9	41.5	2.5	Unpublished data
2003	3.9	45.7	43.4	7.0	Unpublished data
2004	6.8	46.2	41.7	5.3	Unpublished data
2005	6.6	44.0	45.4	4.0	Unpublished data
2006	5.4	46.2	41.6	6.8	Unpublished data
2007	5.2	43.0	44.0	7.8	Carter and Zetterberg (2010)
2008	1.8	60.2	33.5	4.5	Calculated from this report's yearly catch

[1]For the purposes of this report, age is defined as the year of life caught based on the Gilbert-Rich age.

Table 35. Sub-legal Chinook retention in the SG creel survey, 1989 to 2008[1].

Year	Victoria[1]	Strait of Georgia[2]	Reference
1989	2%	20%	Collicutt and Shardlow (1990)
1990	1%	10%	Collicutt and Shardlow (1992)
1991	<1%	7%	Collicutt and Shardlow (1993)
1992	2%	2%	Hardie et al. (1999)
1993	1%	2%	Hardie et al. (1999)
1994	0%	2%	Hardie et al. (1999)
1995	0%	3%	Hardie et al. (1999)
1996	0%	1%	Hardie et al. (1999)
1997	0%	2%	Hardie et al. (1999)
1998	1%	6%	Hardie et al. (1999)
1999	0%	<1%	Hardie et al. (2001)
2000	1%	2%	Hardie et al. (2002)
2001	1%	2%	Hardie et al. (2003)
2002	0%	2%	Unpublished data
2003	<1%	1%	Unpublished data
2004	0%	2%	Unpublished data
2005	<1%	3%	Unpublished data
2006	2%	1%	Unpublished data
2007	1%	5%	Carter and Zetterberg (2010)
2008	2%	2%	Calculated from this report's yearly catch

[1]Victoria represents PFMA's 19 and 20(SG).

[2]Strait of Georgia represents PFMA's 13 to 18, 28 and 29.

FIGURES

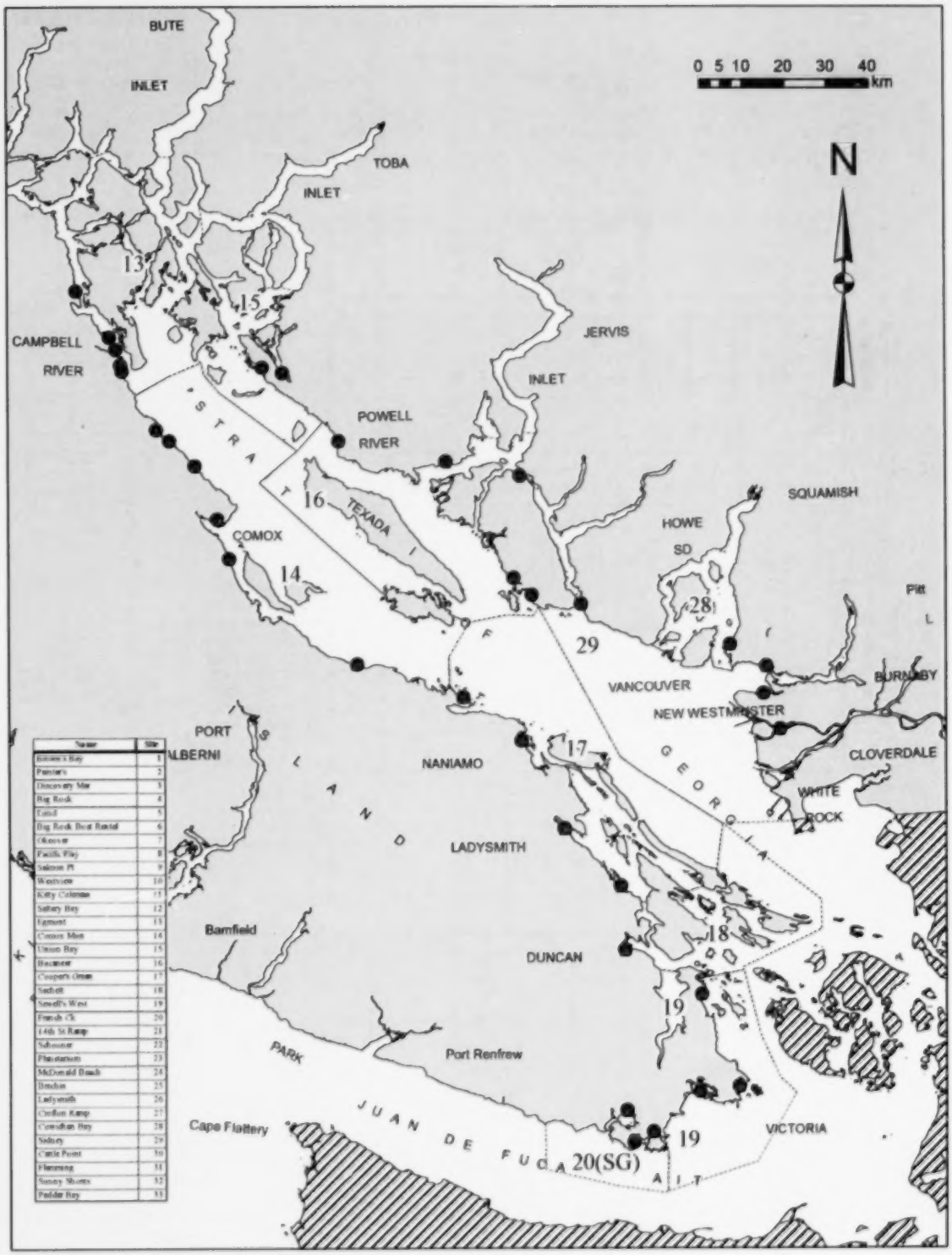


Figure 1. SG creel survey study area and landing site locations, 2008.

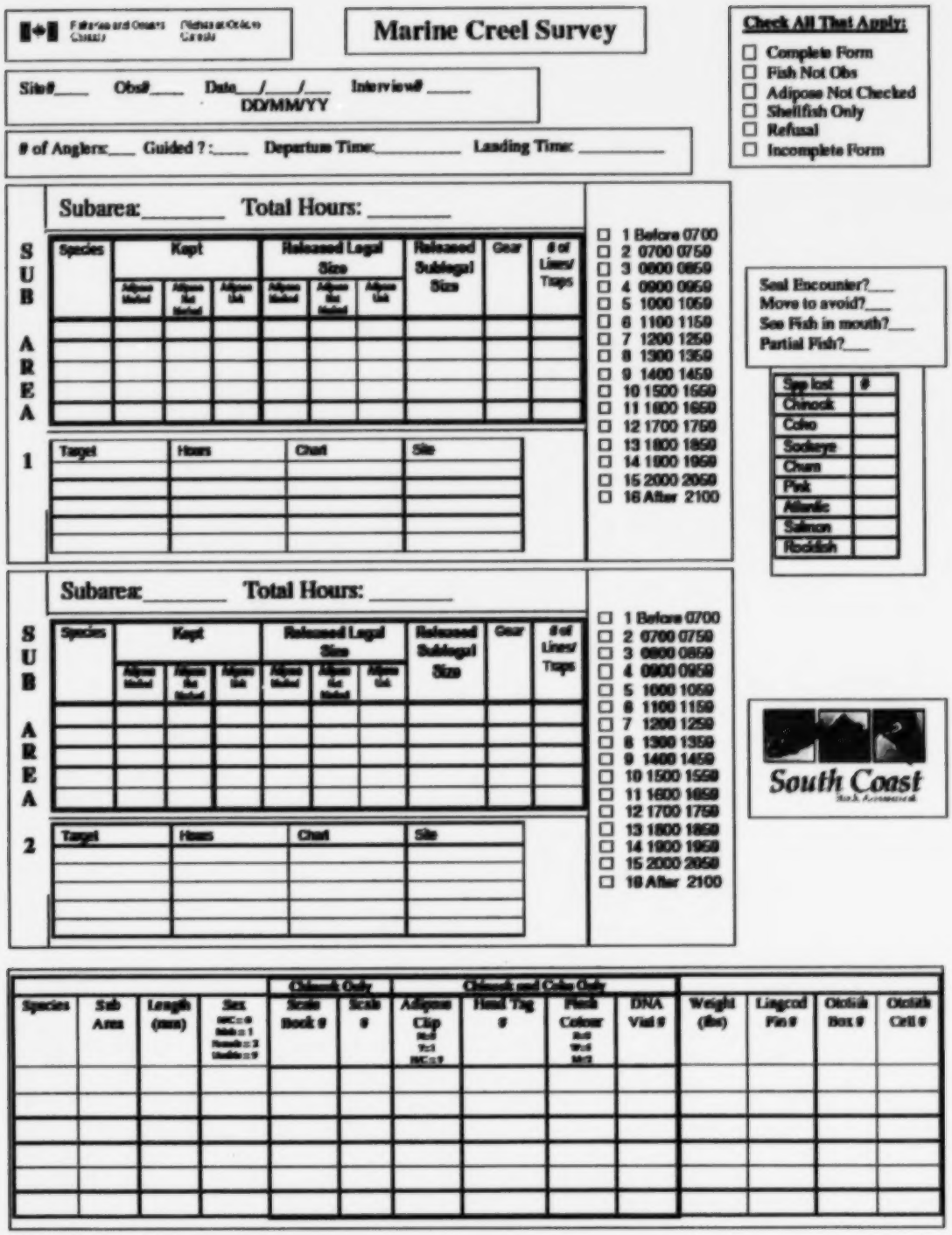


Figure 2. SG creel survey interview form, 2008.

Figure 3a. SG creel survey northern overflight route, 2008.

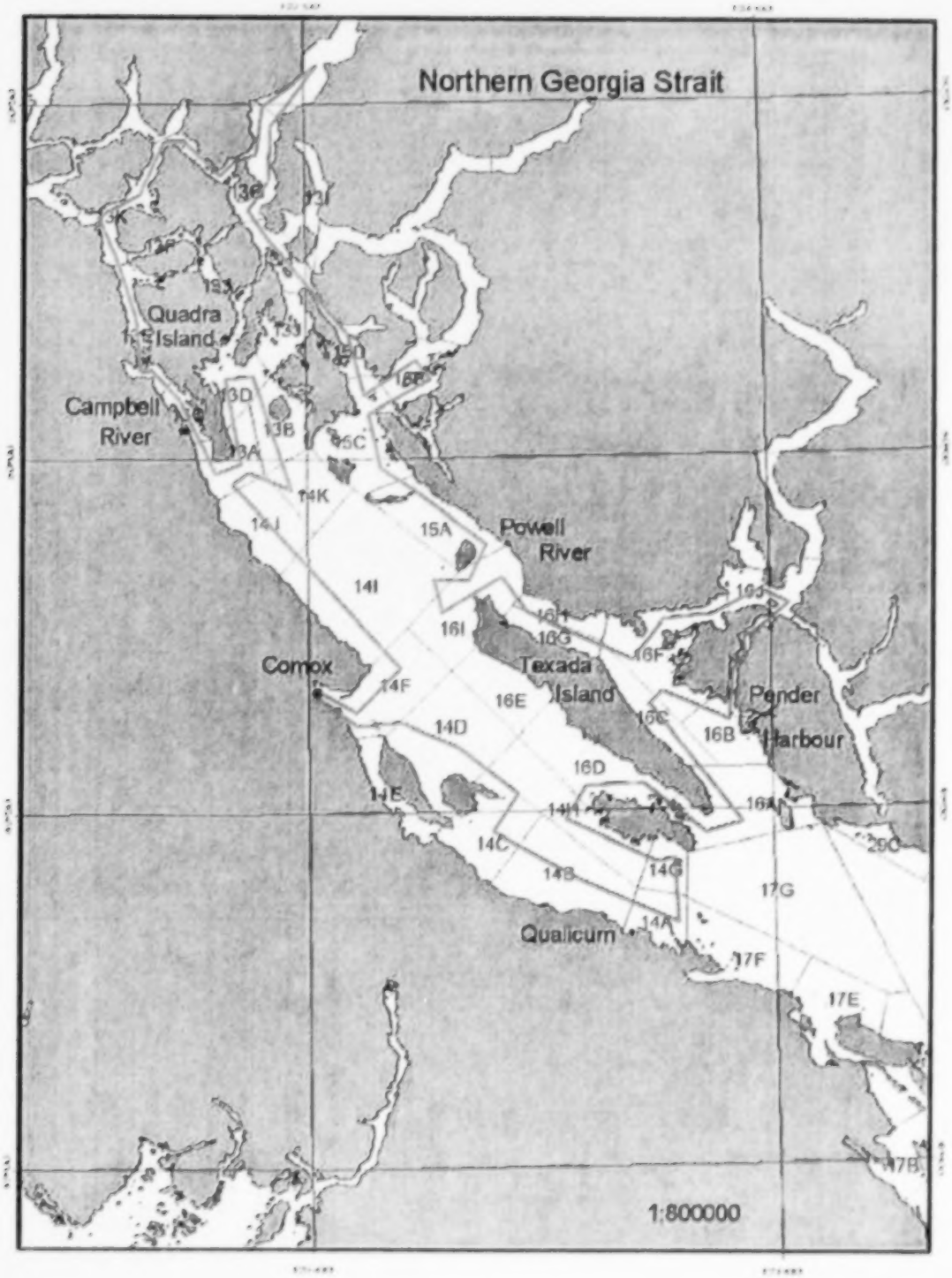


Figure 3a. SG creel survey northern overflight route, 2008.

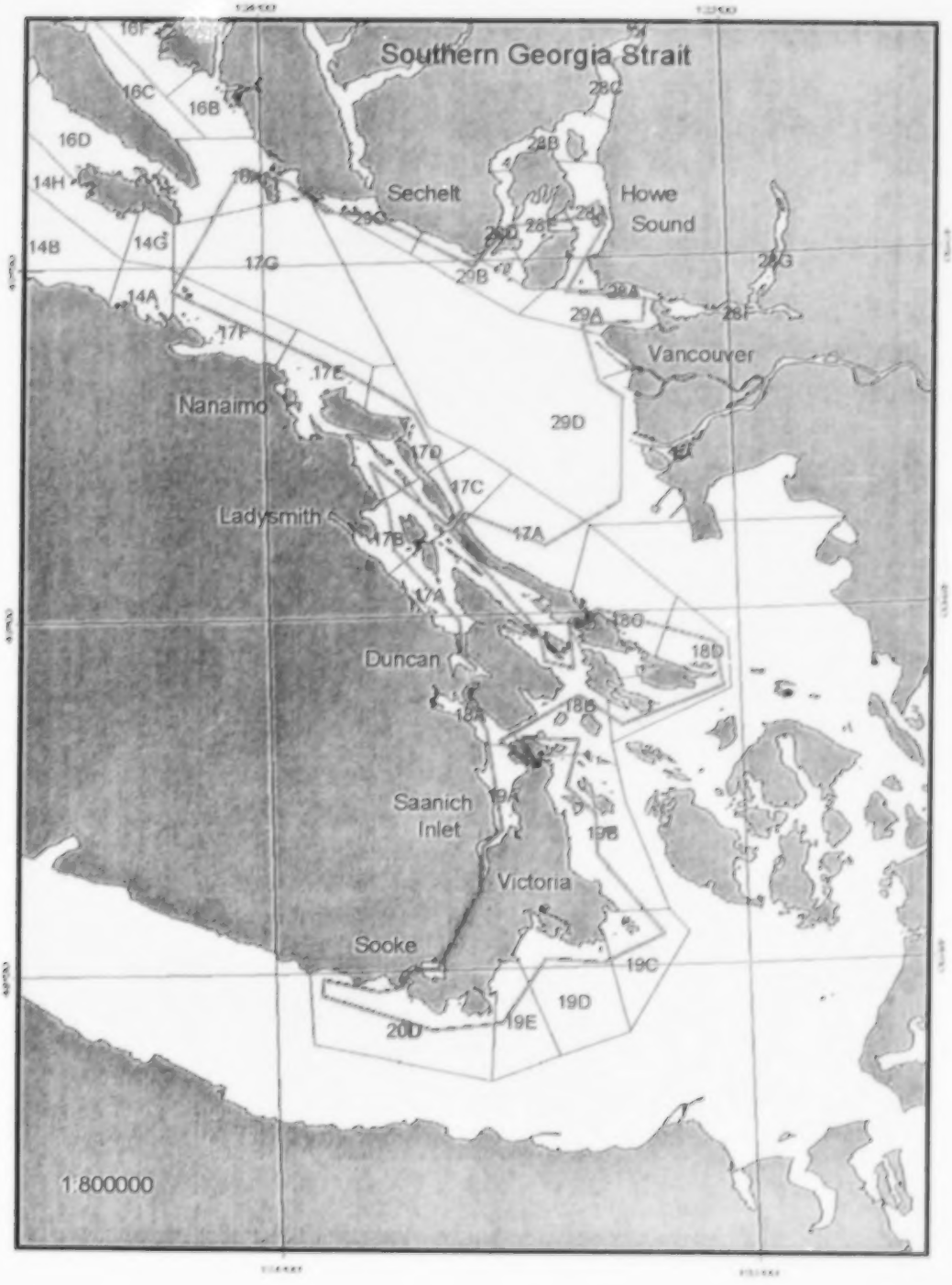


Figure 3b. SG creel survey southern over flight route, 2008.

Figure 3b. SG creel survey southern over flight route, 2008.

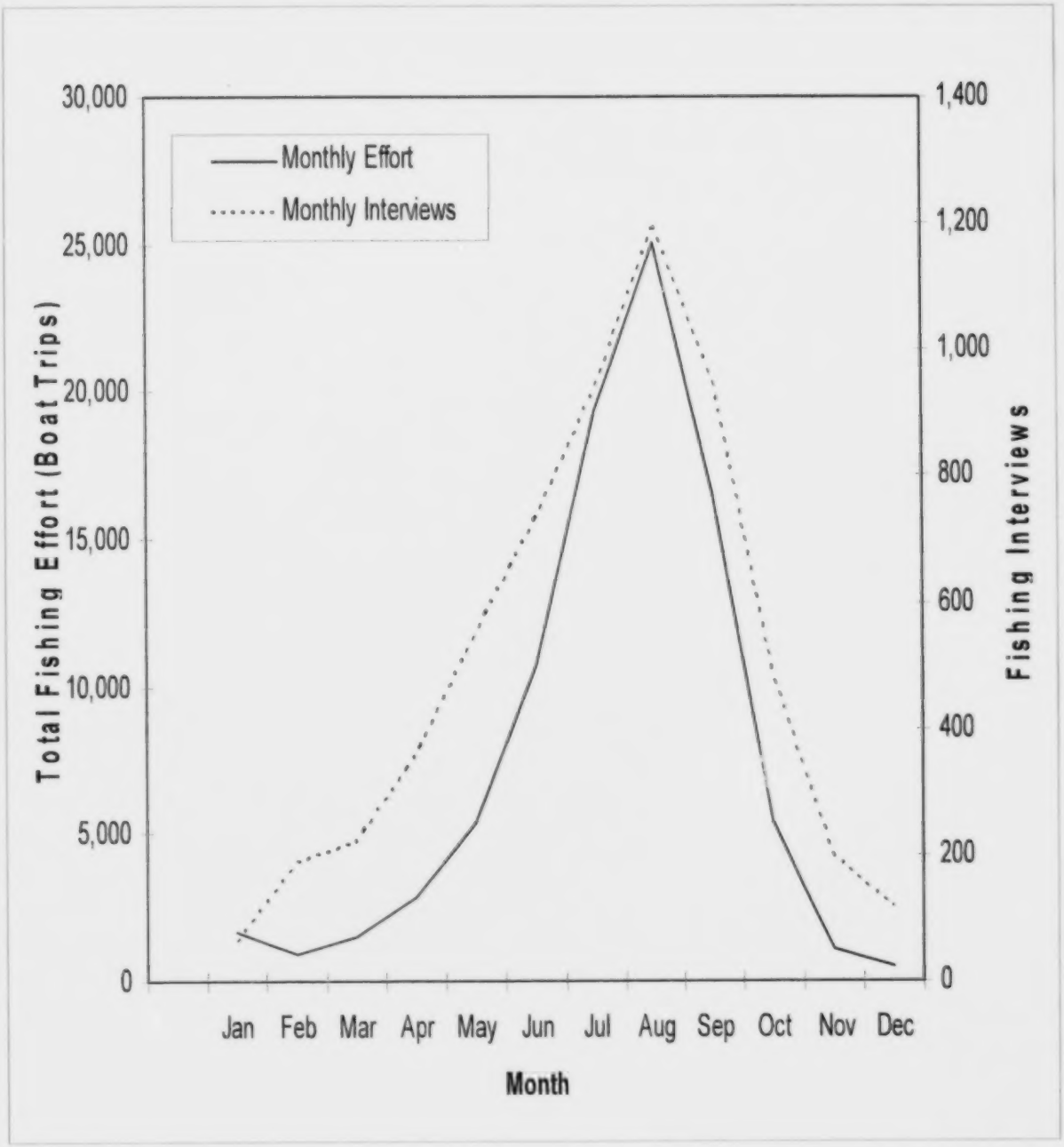


Figure 4. Comparison of monthly[1] total fishing effort and monthly[1] fishing interviews in the SG creel survey, 2008.

[1]In 2008 only PFMA 19 and 20 (SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

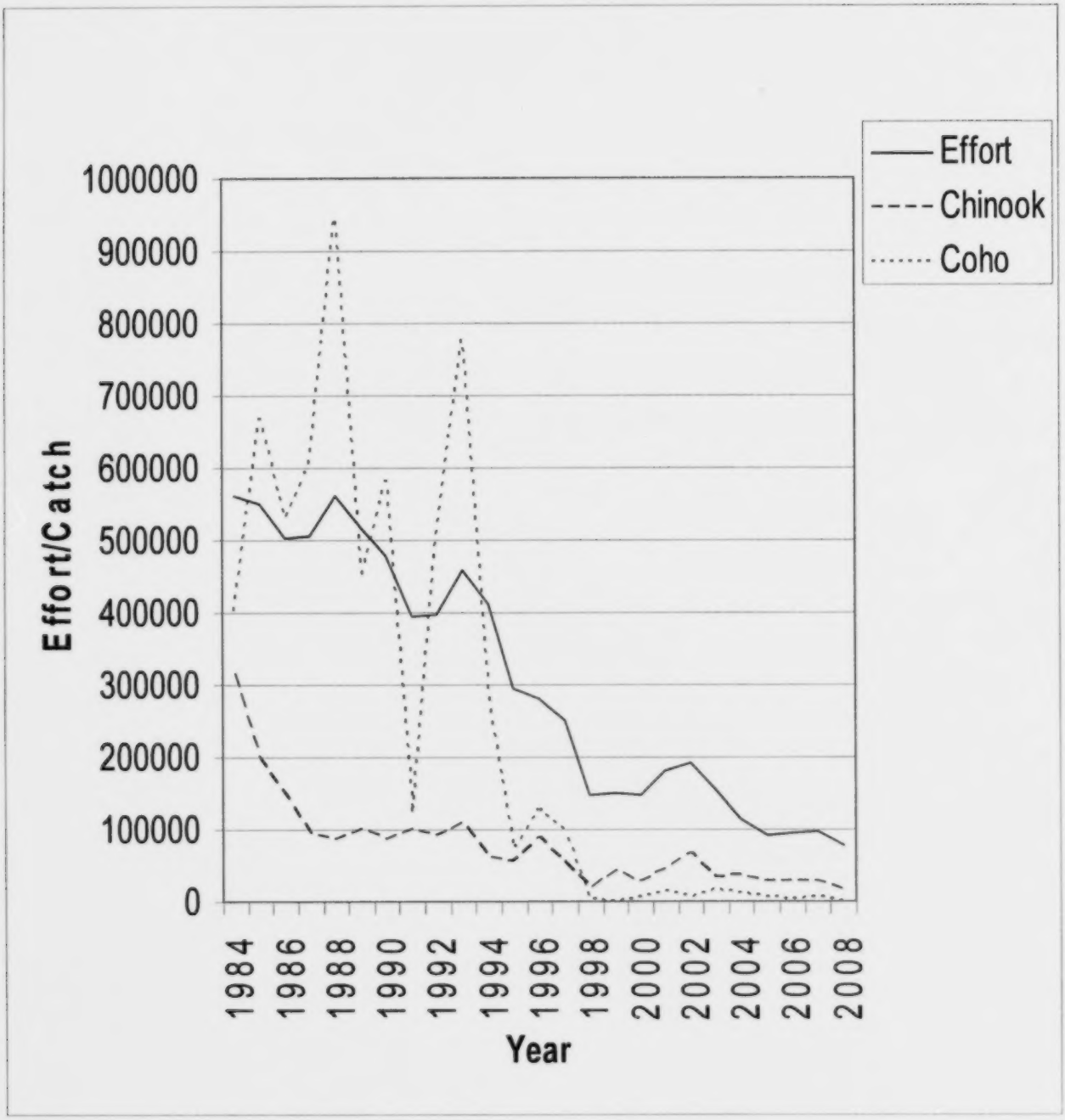


Figure 5. Effort (boat trips) statistics and estimated catches[1] of Chinook and Coho salmon in the SG creel survey, 1984 to 2008.

[1]This table uses creel estimate values from May to September inclusively for historical comparisons.

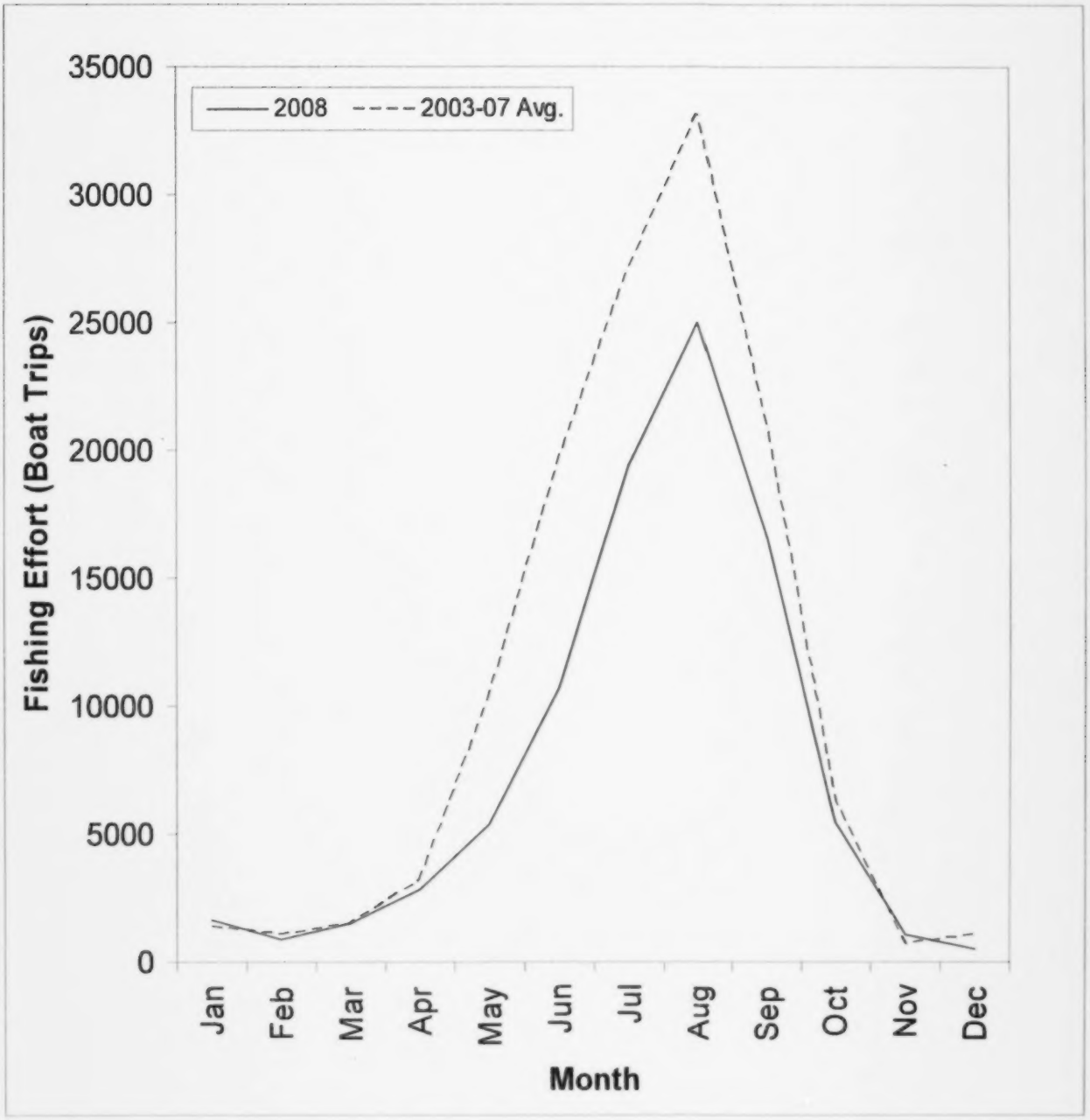


Figure 6. Monthly[1] fishing effort estimates (boat trips) in the SG creel survey during 2008 and the five-year average for 2003 to 2007.

[1]In 2008 only PFMA 19 and 20 (SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

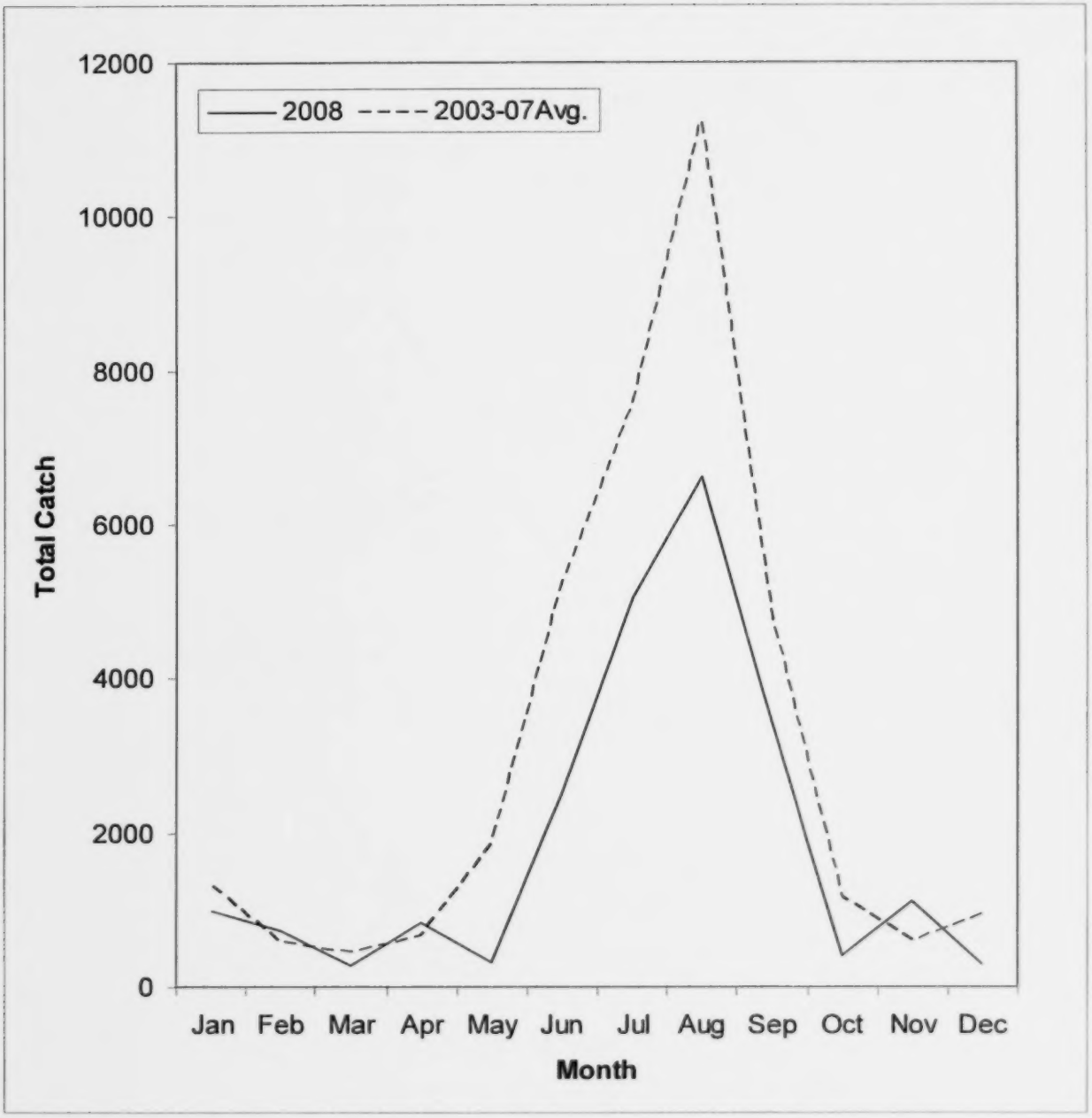


Figure 7. Monthly[1] Chinook catches in the SG creel survey during 2008 and the five-year average for 2003 to 2007.

[1]In 2008 only PFMA 19 and 20 (SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

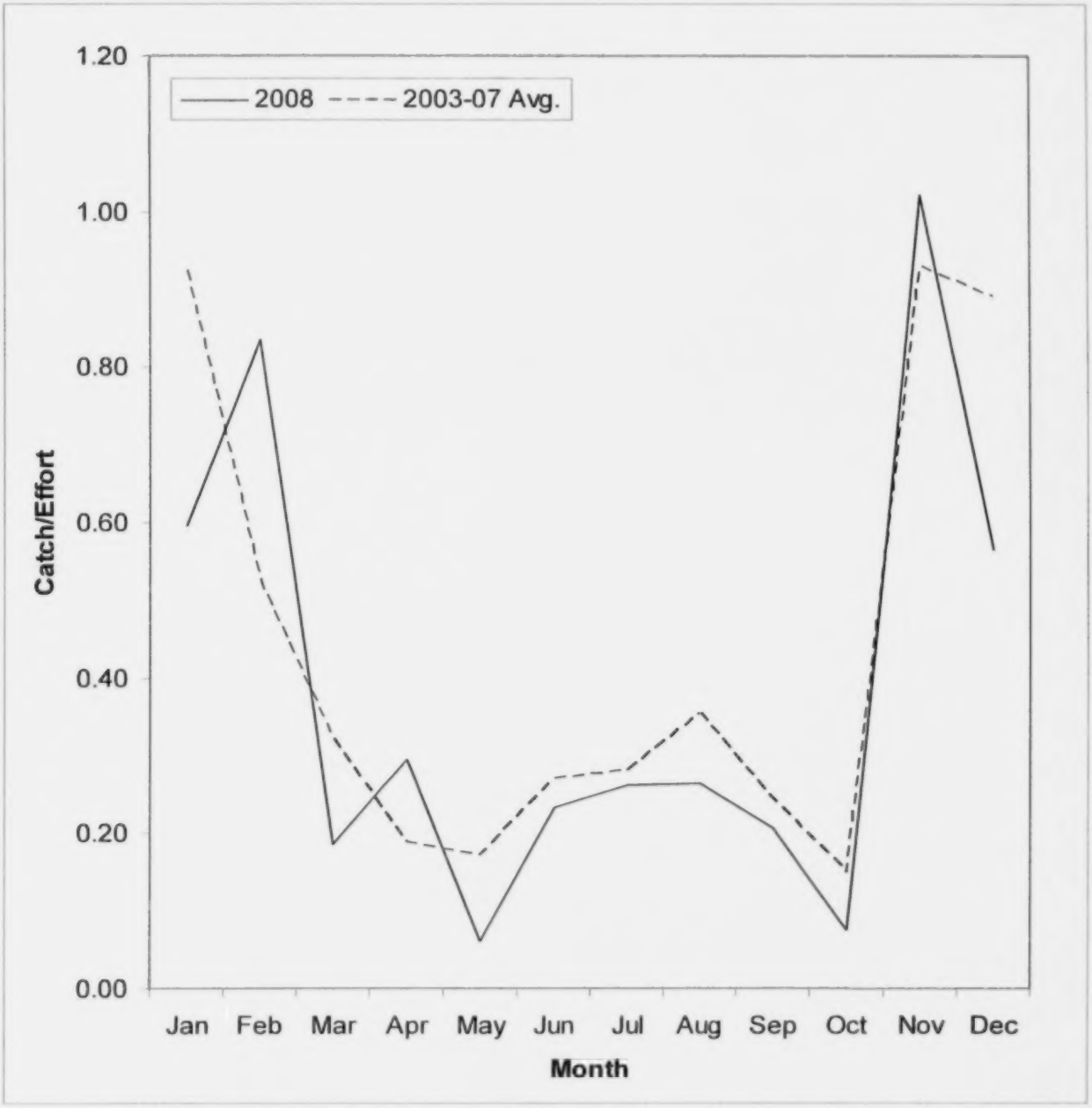
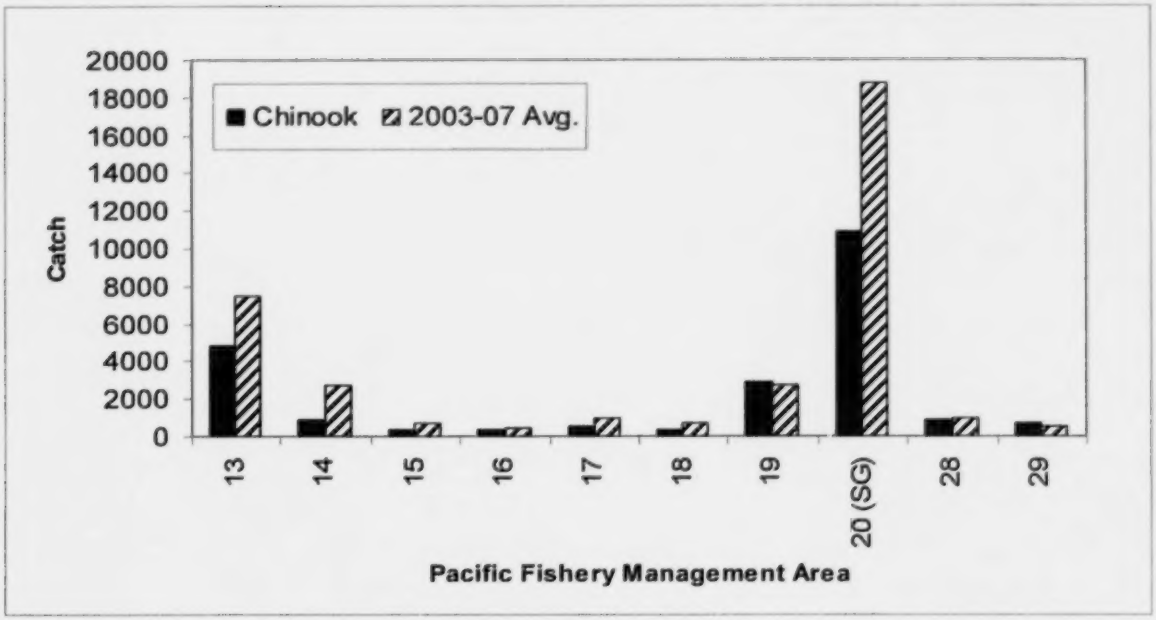


Figure 8. Monthly[1] Chinook catches per boat trip in the SG creel survey during 2008 and the five-year average for 2003 to 2007.

[1]In 2008 only PFMA 19 and 20 (SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.



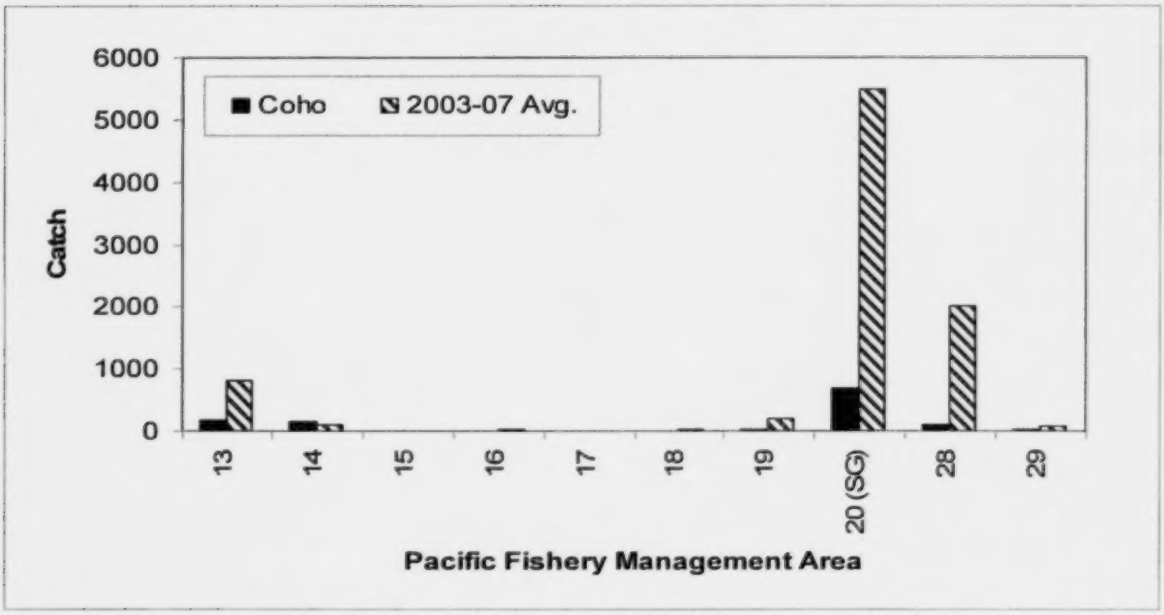


Figure 9. Annual estimated catches of Chinook and Coho salmon by PFMA[1] in the SG creel survey during 2008 and the five-year average for 2003 to 2007.

[1]In 2008 only PFMA 19 and 20 (SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

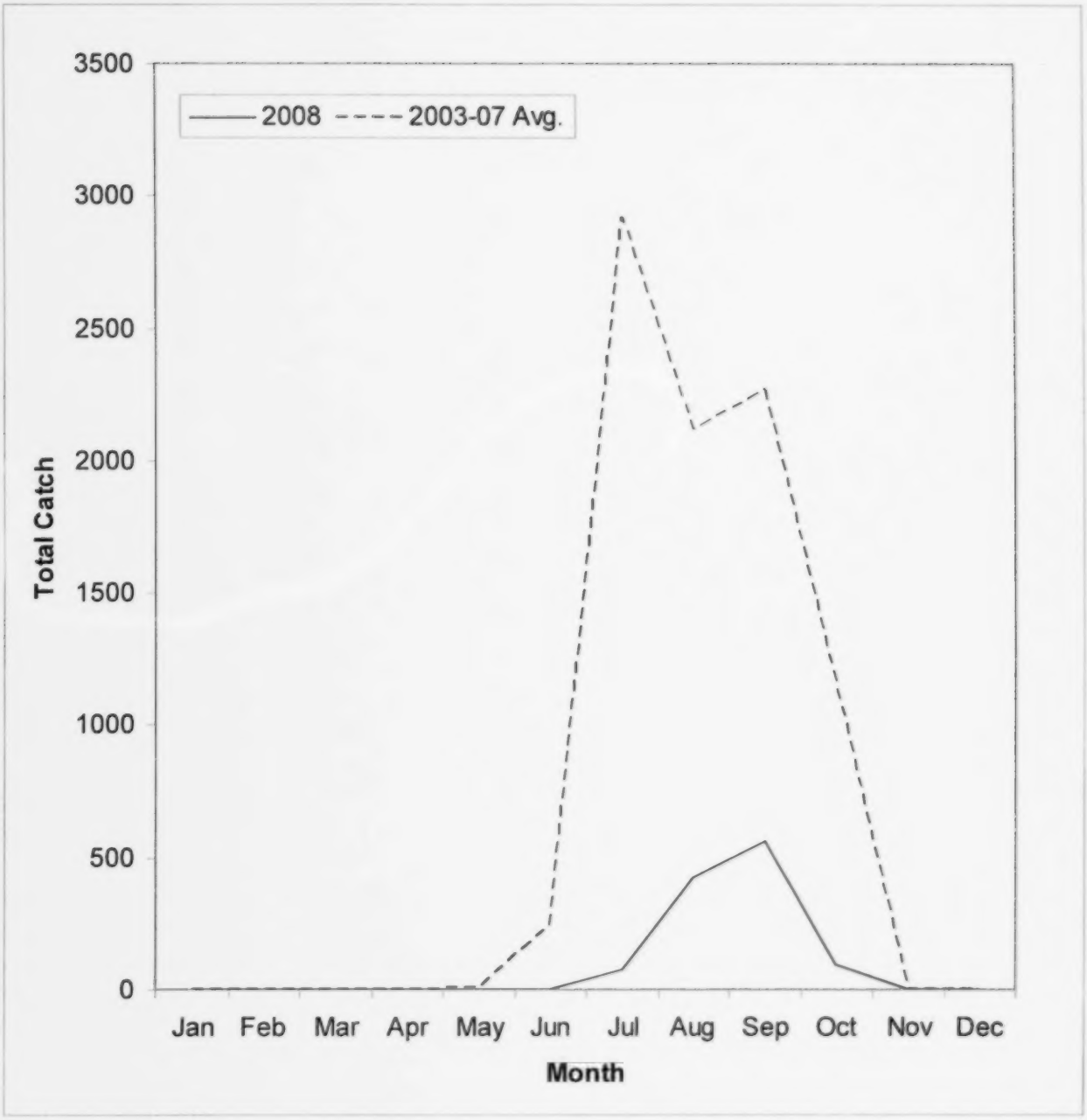


Figure 10. Monthly[1] estimated Coho catches in the SG creel survey during 2008 and the five-year average for 2003 to 2007.

[1]In 2008 only PFMA 19 and 20 (SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

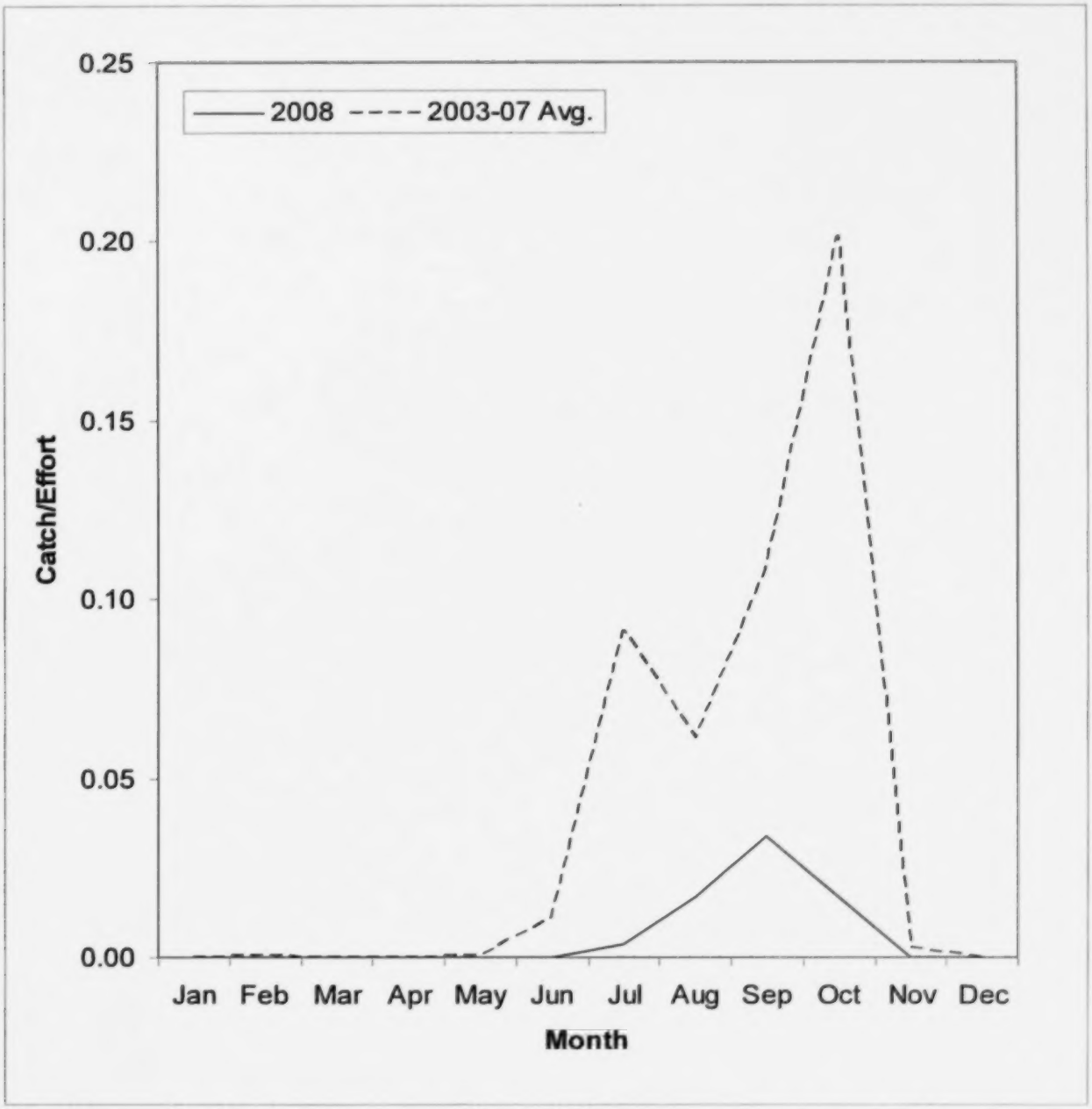


Figure 11. Monthly[1] estimated Coho catches per boat trip in the SG creel survey during 2008 and the five-year average for 2003 to 2007.

[1]In 2008 only PFMA 19 and 20 (SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

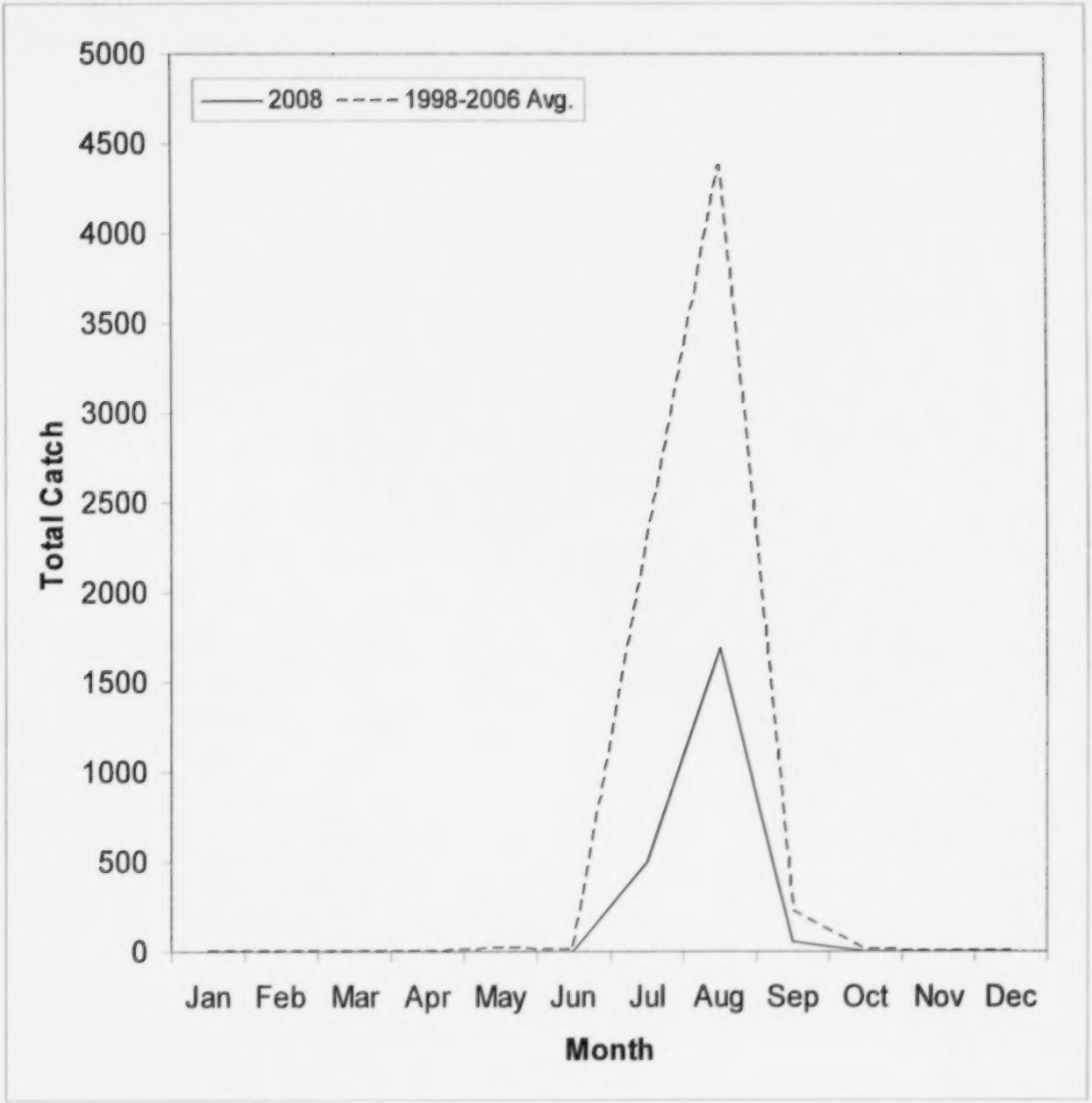


Figure 12. Monthly[1] estimated even year Pink catches in the SG creel survey during 2008 and the five-cycle average for 1998 to 2006.

[1]In 2008 only PFMA 19 and 20 (SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

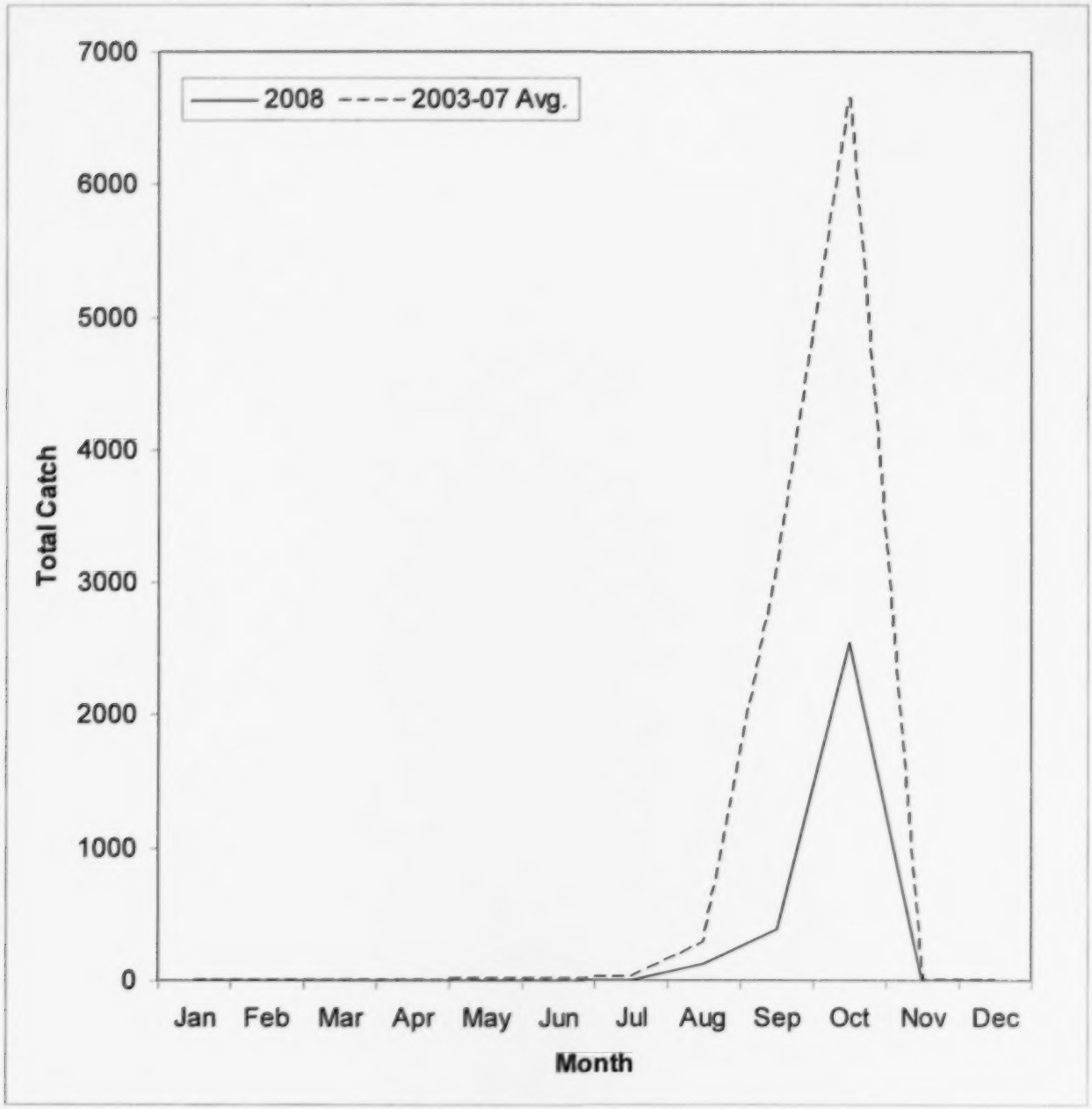
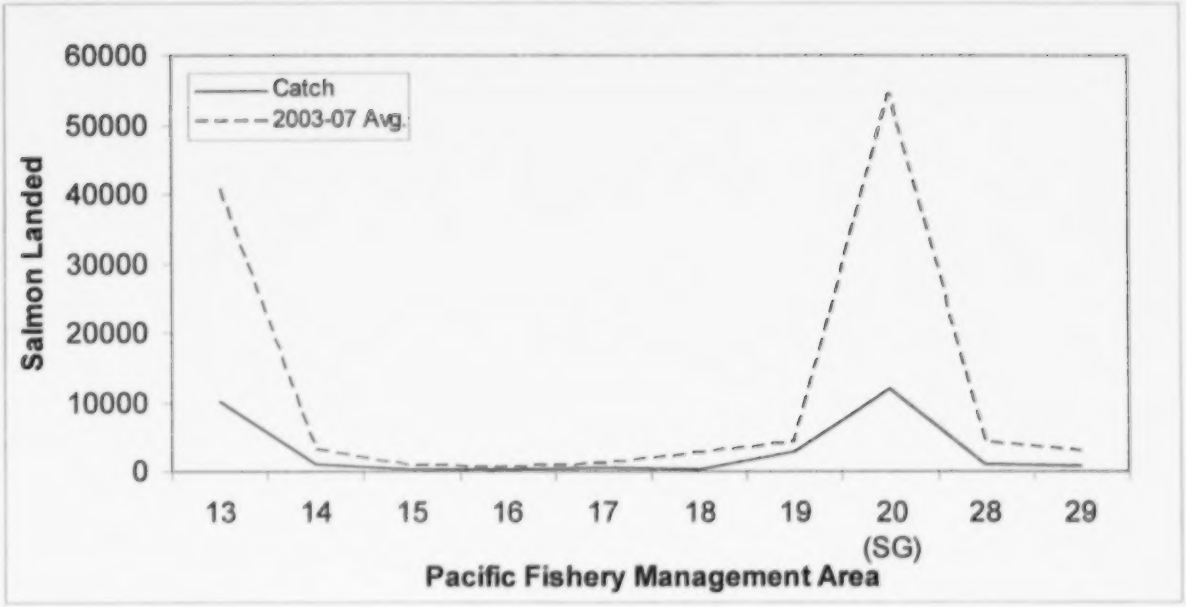


Figure 13. Monthly[1] estimated Chum catches in the SG creel survey during 2008 and the five-year average for 2003 to 2007.

[1]In 2008 only PFMA 19 and 20 (SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.



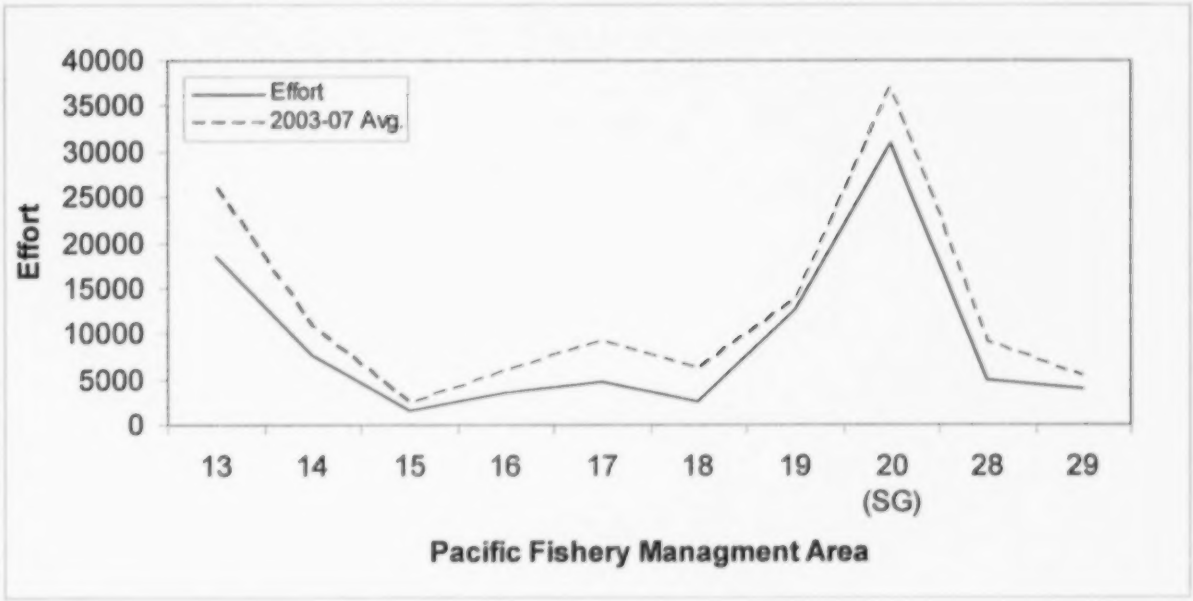


Figure 14. Total salmon landed and total fishing effort by PFMA[1] in the SG creel survey during 2008 and the five-year average for 2003 to 2007.

[1]In 2008 only PFMA 19 and 20 (SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

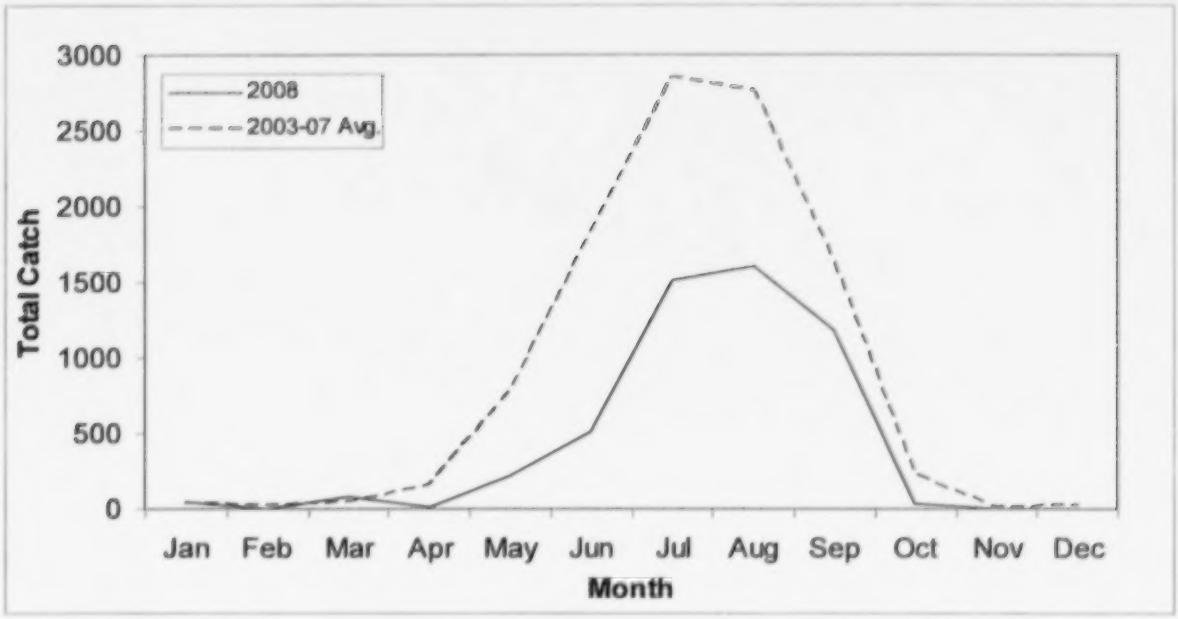


Figure 15. Monthly[1] estimated rockfish (all species) catches in the SG creel survey during 2008 and the five-year average for 2003 to 2007.

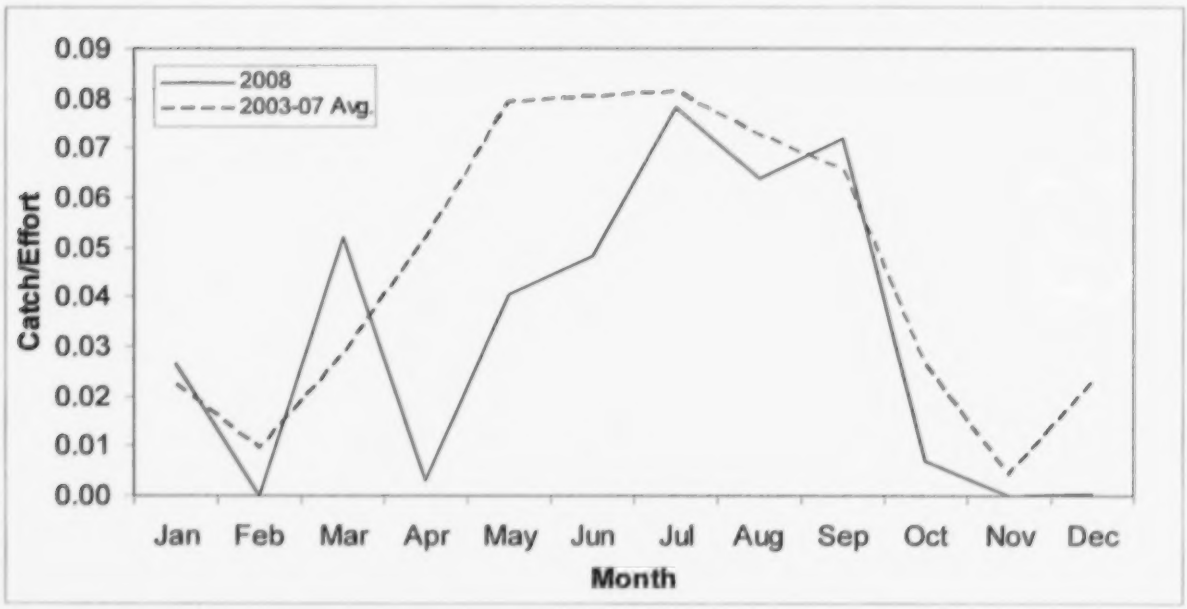


Figure 16. Monthly[1] estimated rockfish (all species) catches per boat trip in the SG creel survey during 2008 and the five-year average for 2003 to 2007.

[1]In 2008 only PFMA 19 and 20 (SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

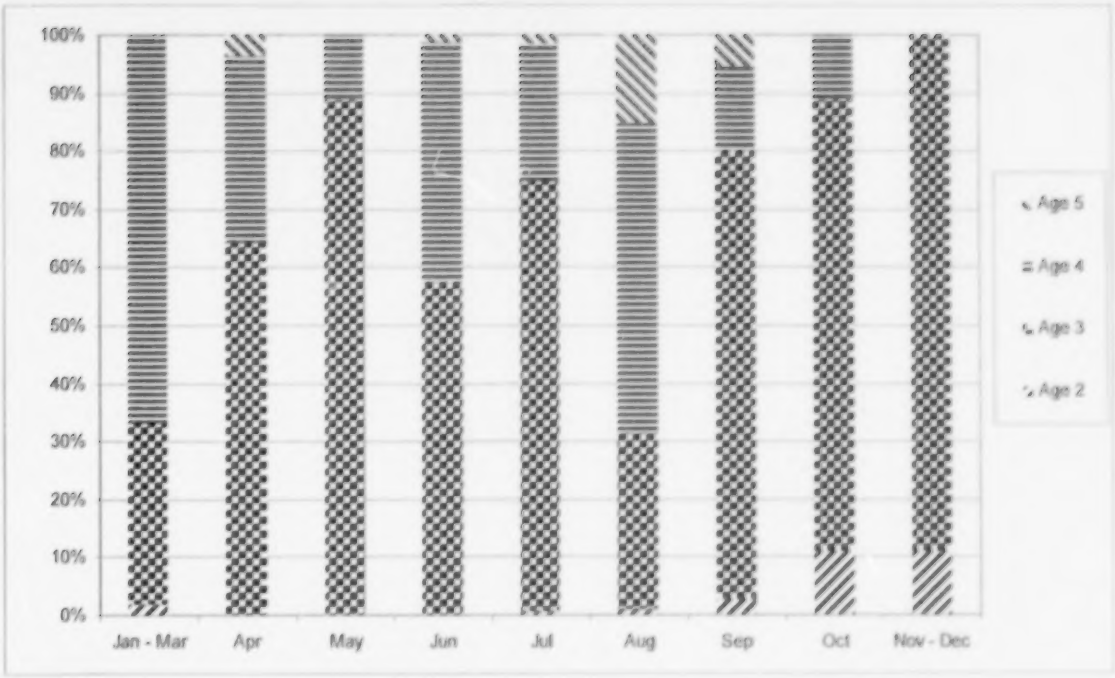


Figure 17. Monthly[1] percent age composition of Chinook salmon sampled in the SG creel survey, 2008.

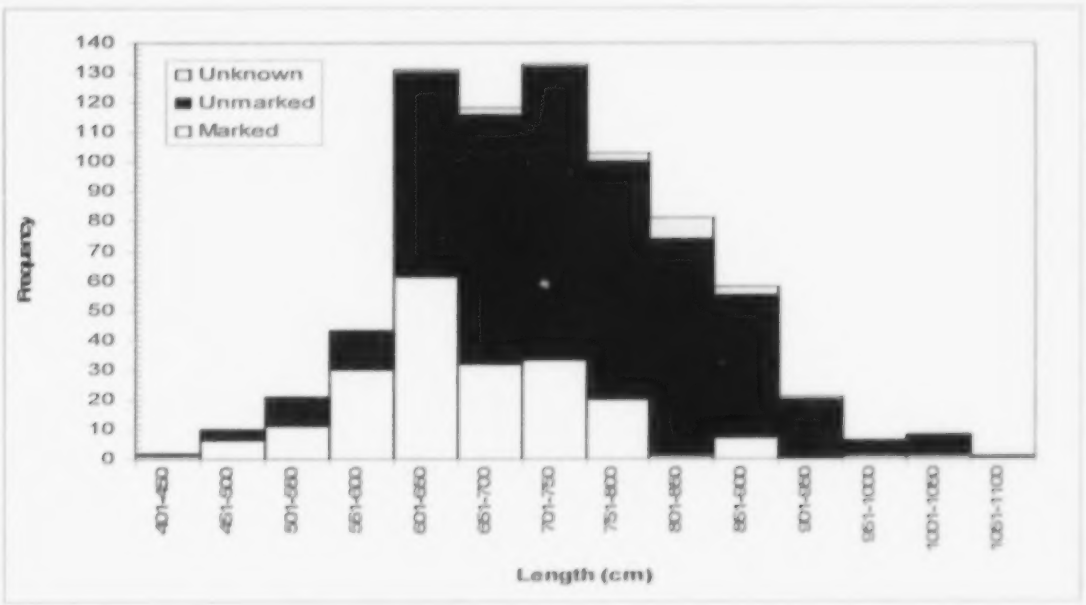


Figure 18. Length frequency distribution of Chinook salmon sampled in the SG creel survey, 2008.

[1]In 2008 only PFMA 19 and 20 (SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

APPENDICES

Appendix A. Previous SG and northern Vancouver Island creel survey reports.

Shardlow, T.F., English, K.K., Hoyt, T., Gillespie, G.E., and Calvin, T.A. 1989. Strait of Georgia Creel Survey sport fishery statistics, 1983. Can. Manuscr. Rep. Fish. Aquat. Sci. 1872: 53 p.

Shardlow, T.F., and Collicutt, L.D. 1989 a. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1984. Can. Manuscr. Rep. Fish. Aquat. Sci. 2032: 61 p.

Shardlow, T.F., and Collicutt, L.D. 1989 b. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1985. Can. Manuscr. Rep. Fish. Aquat. Sci. 2033: 60 p.

Shardlow, T.F., and Collicutt, L.D. 1989 c. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1986. Can. Manuscr. Rep. Fish. Aquat. Sci. 2034: 61 p.

Shardlow, T.F., and Collicutt, L.D. 1989 d. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1987. Can. Manuscr. Rep. Fish. Aquat. Sci. 2035: 62 p.

Shardlow, T.F., and Collicutt, L.D. 1989 e. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1988. Can. Manuscr. Rep. Fish. Aquat. Sci. 2036: 63 p.

Collicutt, L.D., and Shardlow, T.F. 1990. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1989. Can. Manuscr. Rep. Fish. Aquat. Sci. 2087: 75 p.

Collicutt, L.D., Naito, B.G., Ryall, P., and Lapi, L. 1992. Northern Vancouver Island sport fishery creel survey statistics for salmon and groundfish, 1991. Can. Tech. Rep. Fish. Aquat. Sci. 1857: 121 p.

Collicutt, L.D., and Shardlow, T.F. 1992. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1990. Can. Manuscr. Rep. Fish. Aquat. Sci. 2109: 76 p.

Collicutt, L.D., and Shardlow, T.F. 1995. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1991. Can. Manuscr. Rep. Fish. Aquat. Sci. 2137: 75 p.

Collicutt, L.D., and Shardlow, T.F. 1994. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1992. Can. Manuscr. Rep. Fish. Aquat. Sci. 2221: 75 p.

Collicutt, L.D., Shardlow, T.F., Smith, B.D., and Gillespie, G.E. 1994. Northern Vancouver Island sport fishery creel survey statistics for salmon and groundfish, 1992. Can. Tech. Rep. Fish. Aquat. Sci. 1973: 53 p.

Collicutt, L.D., Shardlow, T.F., Smith, B.D., and Gillespie, G.E. 1994. Northern Vancouver Island sport fishery creel survey statistics for salmon and groundfish, 1993. Can. Manuscr. Rep. Fish. Aquat. Sci. 1974: 53 p.

Hardie, D.C., Nagtegaal, D.A., and Nagy, L. 1999. Strait of Georgia sport fishery and Northern Vancouver Island creel survey statistics for salmon and groundfish, 1998. Can. Manuscr. Rep. Fish. Aquat. Sci. 2500: 92 p.

Hardie, D.C., Nagtegaal, D.A., and Nagy, L. 2001. Strait of Georgia sport fishery and Northern Vancouver Island creel survey statistics for salmon and groundfish, 1999. Can. Manuscr. Rep. Fish. Aquat. Sci. 2553: 111 p.

Hardie, D.C., Nagtegaal, D.A., Hein, K., and Sturhahn, J. 2002. Strait of Georgia sport fishery and Northern Vancouver Island creel survey statistics for salmon and groundfish, 2000. Can. Manuscr. Rep. Fish. Aquat. Sci. 2608: 112 p.

Hardie, D.C., Nagtegaal, D.A., Hein, K., and Sturhahn, J. 2003. Strait of Georgia and Northern Vancouver Island sport fishery creel survey statistics for salmon and groundfish, 2001. Can. Manuscr. Rep. Fish. Aquat. Sci. 2640: 107 p.

Lewis, D.M., 2004. West Coast Vancouver Island sport fishery creel survey statistics 2001 and historical data 1984-2000. Can. Manuscr. Rep. Fish. Aquat. Sci. 2639: 66p.

Zetterberg, P.R., Maher, J.M., and Watson, N.M., 2009. Strait of Georgia recreational fishery creel survey finfish data, 2002, to 2006. Can. Data Rep. Fish. Aquat. Sci. 1212: xix + 299 p.

Carter, E.W., and Zetterberg, P.R., 2010. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 2007. Can. Manuscr. Rep. Fish. Aquat. Sci. 2914: xiii + 125 p.

Appendix B. Strait of Georgia Creel (SG) Survey Study Area.

The 'Areas' delineated within the SG creel survey are the same as those statistical areas used previous to the current PFMA's. The description of the area boundaries are those stated as salmon purse-seine fishing areas. Catch and effort estimates were produced for PFMA's 13 through 19, 20(SG), 28, and 29 and these areas are further divided for the purpose of the creel survey in creel sub-areas (Fig. 3 a and b). Sub-areas being delineated by observed sport fishing patterns and concentrations.

The SG creel survey study area and landing site locations used in 2008 are shown in Figure 1. The study area for which these statistics apply includes those waters of JDF Strait and the SG bounded in the south by a line from Sheringham Pt. on Vancouver Island due south to an intersection with the International Boundary and along the International Boundary to the B.C, Mainland coast at Blaine (Boundary Bay) and in the northern by the following boundary lines:

1. A line in Johnstone Strait from Rock Point just west of Rock Bay to a point approximately 1 km west of the western-most point of Turn Island.
2. Includes the waters of Nodales Channel south of East Thurlow Island bound by a line from Johns Point on East Thurlow Island to Owen Point on the mainland coast.
3. Bute Inlet below a line from Lawrence Point across the inlet. This coincides with the intersection of PFMA's 13-21 and 13-22.
4. A line from Raza Point on Raza Island northwest to the mainland coast off Calm Channel.
5. A line from the southern-most point of Raza Island to the western-most point of West Redonda Island.
6. A line from the eastern-most point of West Redonda Island from Marylebone Point to Horace Head on East Redonda Island.
7. Desolation Sound bound by a line from the southern-most point of East Redonda Island to Price Point on the mainland coast.
8. A line from Zephine Head on Gifford Peninsula south of Desolation Sound to Sarah Point on the Malaspina Peninsula.
9. A line from Elephant Point on the mainland coast northeast of Saint Vincent Bay to intersect with the peak of Mount Foley approximately 1.5 km south southwest of Lapan Creek.
10. A line starting at a point approximately 2.5 km north of Dacres Point on the mainland coast to a point approximately 1 km north of Treat Creek.
11. A line that coincides with the intersection of PFMA's 16-9 and 16-11 from Egmont Point on the mainland coast to the Sechelt Peninsula.
12. A line that coincides with the intersection of the boundaries of PFMA's 28-1 and 28-3 in Howe Sound.
13. A line from the southern-most point of Halkett Point on Gambier Island due east till it intersects with the mainland coast at Lions Bay.
14. A line directly under the Lions Gate Bridge from Prospect Point northeast to the West Vancouver shoreline.

Appendix C. Methods and Equations Used in Analysis of catch and Effort Statistics for the SG Creel Survey.

Description of terms, variables and subscripts used in this report.

DESCRIPTION OF TERMS

Shift/Stint - Represents a combination of a day type and landing site which was sampled on a single day. i.e. one sampling stint performed by an interviewer.

Work block - Represents one of three possible periods at a particular site of a given day type. Start and end times associated with these shifts change during the season due to available light.

Work Block 0 is a midday shift
Work Block 1 is a morning shift
Work Block 2 is an afternoon shift

Day type - There are two possible day types: weekdays and weekends; holidays are considered to be weekend days.

Time block - Each day is divided into 16 time blocks which are:

1) before 7 am
2) 7:00 - 7:59 am
3) 8:00 - 8:59 am
.
.
15) 8:00 - 8:59 pm
16) after 9 pm

DESCRIPTION OF VARIABLES

A	-	Number of boats actively fishing
B	-	Number of boats observed on a flight
C	-	Catch
C'	-	Catch of marked salmon
CPE	-	Catch per boat trip
E	-	Effort (estimated total number of boat trips)
I	-	Number of boats interviewed and found to have been fishing
L	-	Number of boats landing
n	-	Number sampled
N	-	Population size from which n samples were observed
P	-	Proportion
T	-	Number of boat trips
V	-	Number found to be marked
W1	-	Weighting factor to expand for all possible stints at each site
W2	-	Weighting factor to expand for all boats that landed in each work

DESCRIPTION OF SUBSCRIPTS

a	-	age
g	-	a set of landing sites
d	-	day type
i	-	site
j	-	work block
k	-	stint
l	-	landing time block
m	-	month
q	-	the next boat landing at site i and upon interviewing, found to have been fishing (q ranges from 1 to n)
r	-	species
s	-	sub-PFMA
t	-	time block
u	-	flight
x	-	region
y	-	annual

Calculation of Catch and Effort Statistics

To estimate the monthly catch and effort, three components had to be calculated from a month's data:

(1) the weighted mean daily fishing pattern from interview data,
(2) the weighted mean catch per unit effort from interview data and
(3) the mean sport count from overflight data.

The equations used to estimate the means and variances for all catch and effort statistics are shown below.

Weighting factors used to estimate the daily fishing activity were calculated using the equations derived from DPA Consulting Ltd. (1982).

The data obtained from each shift were multiplied by the following weighting factor (W1) to expand for all possible stints at each site. The formula reads:

$$W1_{dij} = \frac{N_d}{n_{dij}} \qquad (1)$$

where N_d is the total number of days of type d in that month and n_{dij} is the number of times the jth work block at the ith site was sampled on type d days.

The interviews aggregated by work block were multiplied by the weighting factor W2 to expand for all boats that landed in each work block. The formula reads:

$$W2_{dijk} = \frac{L_{dijk}}{I_{dijk}} \tag{2}$$

where L_{dijk} is the number of boats landed and I_{dijk} is the number of boats interviewed on the kth stint in the jth work block at the ith site on a day type d.

Therefore, the following equations can be used to calculate an unbiased estimate of the total monthly catch ($\hat{C}_{dgr}$), fishing trips ($\hat{T}_{dg}$) and fishing activity in time block $\hat{A}_{dgt}$ for each day type (d) where g is a set of landing sites (i). These formulas read:

$$\hat{C}_{dgr} = \sum_i \sum_j \left[W1_{dij} \sum_k \sum_q (W2_{dijk} C_{dijklqr}) \right] \tag{3}$$

$$\hat{T}_{dg} = \sum_i \sum_j \left[W1_{dij} \sum_k \sum_q (W2_{dijk}) \right] \tag{4}$$

$$\hat{A}_{dgt} = \sum_i \sum_j \left[W1_{dij} \sum_k \sum_q (W2_{dijk} A_{dijkqt}) \right] \tag{5}$$

where C_{dijkqr} is the catch of species r by the qth fishing party, and A_{dijkqt} can equal 0 or 1, thereby indicating whether the qth fishing party was actively fishing in time block t. Thus, the mean monthly catch per unit effort (CPE_{dgr}) measured in terms of numbers of fish kept per completed boat trip, and proportion of daily fishing effort active during the hour of the aerial survey (P_{dgt}) can be calculated with the following equations:

$$CPE_{dgr} = \frac{\hat{C}_{dgr}}{\hat{T}_{dg}} \tag{6}$$

$$P_{dgt} = \frac{\hat{A}_{dgt}}{\hat{T}_{dg}} \tag{7}$$

where CPE_{dgr} and P_{dgt} are calculated for each day type (d) and group of landing sites (g).

The groups of landing sites reflect geographic areas with similar catch rates and/or activity patterns.

The estimated mean number of boats fishing during the hour of the sport boat count by overflight was calculated for each sub-PFMA using the following equation:

$$\overline{B}_{dst} = \frac{\sum_{u} B_{sdtu}}{n_{ds}} \tag{8}$$

where B_{sdtu} is the number of boats observed fishing on flight u at time t, in sub-PFMA s for day type d.

The mean sport boat count at the time of the overflight ($\overline{B}_{dst}$) and proportion of daily fishing effort active during the hour of the overflight (P_{dgt}) were used in the following equation to calculate the total fishing effort for sub-PFMA s on day type d:

$$E_{ds} = \overline{B}_{dst} \frac{1}{P_{dgt}} N_d \tag{9}$$

where N_d is the number of type d days in the month. Interview data for the sub-PFMA fished (s) by anglers landing at each of the sites (i) within a landing group (g) were used to select the proportions (P_{dgt}) that are appropriate for each mean boat count ($\overline{B}_{dst}$).

The estimate for total effort by sub-PFMA and day type (E_{ds}) and the weighted catch per boat trip for a group of landing sites by day type, area and species (CPE_{dgr}) were used to calculate total catch for each species (r) and each sub-PFMA (s):

$$C_{sr} = \sum_{d} (E_{ds} CPE_{dgr}) \tag{10}$$

The interview data were also used to select the catch per effort estimates (CPE_{dgr}) that should be applied to the effort estimates (E_{ds}) for a specific sub-PFMA (s).

Variance of Total Fishing Effort

The variance estimate for the number of boat trips in each sub-PFMA was:

$$Var(b_{dsu}) = \frac{(N_d - n_{ds})}{(N_d - 1)} \times \frac{\sum_{u=1}^{n} b_{dsu}^2 - \frac{\left(\sum_{u=1}^{n} b_{dsu}\right)^2}{n_{ds}}}{(n_{ds} - 1)} \quad (11)$$

where b_{dsu} is the estimated number of boat trips on aerial survey u, in sub-PFMA s, on day type d and n is the number of days when boat counts were conducted in sub-PFMA s on type d days; and N_d is the total number of type d days in the month.

The variance estimate for the total number of boat trips in a given month for each day type and sub- PFMA was:

$$Var(E_{b_{ds}}) = N_d^2 \times Var(b_{ds}) \quad (12)$$

Variance of Total Catch

The variance estimate for mean catch per effort was:

$$Var(CPE_{dsi}) = \frac{\sum_{i=1}^{ni} cpe_{dsi}^2 - \frac{\left(\sum_{i=1}^{ni} \times cpe_{dsi}\right)^2}{ni_{ds}}}{(ni_{ds} - 1)} \quad (13)$$

where cpe_{dsi} is the catch per effort reported in interview i, for the sub-PFMA or group of sub-PFMA's s, on the day type d; and ni_{ds} is the number of interviews for that stratum.

The variance for the total catch in each stratum was estimated by combining the variance for fishing effort and variance for catch per effort using the significant terms of a Taylor series expansion (Cochran 1963):

$$Var(C_s) = \sum_{d=1}^{2} \left(E_{ds}^2 \times Var(CPE)_{ds} + CPE_{ds}^2 \times Var(E)_{ds} + Var(E_{ds}) \times Var(CPE)_{ds}\right) \quad (14)$$

Estimation of Marked Chinook and Coho Salmon

The incidence of marked (adipose-clipped) Chinook and Coho was recorded in each interview. The proportion of marks observed for each region, month and species (P_{xmr}) was calculated as:

$$P_{xmr} = \frac{V_{xmr}}{n_{xmr}} \tag{15}$$

where V is the number of marked fish observed and n is the number of fish inspected by region (x), month (m) and species (r).

The variance of each proportion was calculated as:

$$S^2_{P_{xmr}} = \frac{P_{xmr}(1 - P_{xmr})}{n_{xmr}} \tag{16}$$

Monthly catch estimates of marked salmon were calculated as:

$$C'_{xmr} = P_{xmr} C_{xmr} \tag{17}$$

where C_{xmr} is the estimated catch of species r in region x and month m.

The variance of the marked catch estimates was calculated as:

$$S^2_{C'xmr} = P^2_{xmr} S^2_{Cxmr} + C^2_{xmr} S^2_{Pxmr} + S^2_{Cxmr} S^2_{Pxmr} \tag{18}$$

where S^2_{Cxmr} is the variance of the catch estimates of species r in region x and month m.

The estimate annual proportions of marked salmon caught in each region (weighted by the corresponding regional annual catch estimates) were calculated as:

$$P_{xry} = \frac{C'_{xry}}{C_{xry}} \tag{19}$$

where

$$C'_{xry} = \sum_m C'_{xmr} \quad and \quad C_{xry} = \sum_m C_{xmr} \tag{20}$$

The variance of the annual proportions was calculated as:

$$S^2{}_{P_{xry}} = \left(\frac{C'_{xry}}{C_{xry}}\right)^2 \left[\frac{S^2{}_{C'_{xry}}}{(C'_{xry})^2} + \frac{S^2{}_{C_{xry}}}{(C_{xry})^2}\right] \tag{21}$$

where $S^2{}_{C_{xry}}$ is the variance of the annual estimated catch of species r in region x.

Estimation of Age Composition of Chinook Catch

Scale samples and length measurements were taken in a sub-sampling program during the interview process. Ages used in this report represent total age of the fish.

The proportion of Chinook at each age and month (P_{am}) was calculated as:

$$P_{am} = \frac{a_m}{n_m} \tag{22}$$

where a_m represents the number of fish observed at age a during month m, and n_m is the total number of fish bio-sampled in that month.

The catch at age of Chinook in each month was calculated as:

$$C_{am} = P_{am} C_m \tag{23}$$

where C_m is the estimated catch of Chinook salmon in a given month m.

The annual catch at age was calculated as:

$$C_{ay} = \sum_{m} C_{am} \tag{24}$$

The annual proportion at age (weighted by monthly catch) was calculated as:

$$P_{ay} = \frac{C_{ay}}{C_{y}} \tag{25}$$

Appendix D-1. Effort by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																		Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	807	325	848	396	-	-	-	-	1656	512
Feb	-	-	-	-	-	-	-	-	-	-	-	-	653	199	229	95	-	-	-	-	882	221
Mar	-	-	-	-	-	-	-	-	-	-	-	-	1155	159	316	72	-	-	-	-	1470	174
Apr	57	20	60	15	79	23	129	22	649	93	127	29	873	111	382	95	158	41	321	68	2834	197
May	574	199	251	75	261	142	244	105	463	83	664	187	1467	193	621	174	581	224	255	96	5382	496
Jun	1810	164	816	170	211	53	261	77	559	91	197	50	625	114	5641	1754	271	49	323	90	10712	1782
Jul	5779	599	1649	403	567	92	851	109	1642	146	712	72	1259	109	5270	653	1151	113	517	54	19398	1011
Aug	5678	291	1645	232	347	59	1372	395	510	61	415	44	2044	326	10764	1206	1039	123	1202	268	25016	1397
Sep	2514	227	3064	501	125	44	625	96	699	95	277	54	1408	266	5146	988	1417	160	1246	172	16521	1194
Oct	2135	315	160	31	0	0	102	24	227	48	151	35	1312	241	923	122	331	81	76	17	5416	429
Nov	-	-	-	-	-	-	-	-	-	-	-	-	678	481	409	36	-	-	-	-	1086	482
Dec	-	-	-	-	-	-	-	-	-	-	-	-	239	163	291	106	-	-	-	-	530	195
Total	18547	813	7645	709	1591	193	3584	441	4748	245	2542	223	12520	859	30839	2484	4948	338	3940	356	90904	2942

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-2. Chinook kept by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est. Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	482	84	503	164	-	-	-	-	985	184
Feb	-	-	-	-	-	-	-	-	-	-	-	-	505	124	232	81	-	-	-	-	737	148
Mar	-	-	-	-	-	-	-	-	-	-	-	-	214	68	61	23	-	-	-	-	275	72
Apr	0	0	17	5	135	96	127	70	81	28	48	28	82	20	68	39	45	15	236	91	838	162
May	18	9	6	9	36	18	2	2	16	7	0	0	57	36	8	5	119	55	67	28	329	76
Jun	638	118	82	28	79	55	12	15	38	12	6	3	13	10	1583	416	28	13	23	22	2501	438
Jul	2694	518	111	49	41	18	134	52	300	91	139	32	77	36	1295	232	252	101	22	10	5066	591
Aug	1176	163	146	48	30	17	71	51	66	20	13	7	129	51	4575	579	118	59	291	118	6614	622
Sep	295	65	476	189	17	14	8	7	54	23	112	67	59	29	2028	367	287	120	90	53	3426	444
Oct	0	0	0	0	0	0	0	0	11	6	0	0	340	98	46	26	8	8	1	1	406	102
Nov	-	-	-	-	-	-	-	-	-	-	-	-	794	353	315	68	-	-	-	-	1109	360
Dec	-	-	-	-	-	-	-	-	-	-	-	-	129	67	170	95	-	-	-	-	299	116
Total	4821	560	838	203	338	116	354	103	565	102	317	80	2882	416	10885	863	856	177	730	163	22587	1171

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-3. Legal Chinook released by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	151	80	0	0	-	-	-	-	151	80
Feb	-	-	-	-	-	-	-	-	-	-	-	-	6	3	14	16	-	-	-	-	19	17
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	13	11	-	-	-	-	13	11
Apr	0	0	0	0	0	0	0	0	17	10	15	5	12	9	13	8	4	3	6	3	66	17
May	0	0	0	0	0	0	0	0	33	15	23	18	0	0	0	0	0	0	0	0	55	23
Jun	22	22	0	0	0	0	0	0	6	5	17	10	0	0	29	34	0	0	0	0	73	41
Jul	0	0	0	0	0	0	0	0	41	25	18	9	1	1	37	38	0	0	0	0	96	47
Aug	25	25	21	15	0	0	0	0	27	19	0	0	40	33	97	99	12	12	0	0	222	110
Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	148	77	83	85	3	3	233	115
Oct	7	7	0	0	0	0	0	0	0	0	0	0	19	21	19	14	0	0	0	0	45	26
Nov	-	-	-	-	-	-	-	-	-	-	-	-	67	51	174	114	-	-	-	-	241	125
Dec	-	-	-	-	-	-	-	-	-	-	-	-	5	2	0	0	-	-	-	-	5	2
Total	54	34	21	15	0	0	0	0	123	37	72	23	300	103	542	179	99	86	8	4	1219	231

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-4. Sub-legal Chinook released by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	657	364	522	213	-	-	-	-	1179	421
Feb	-	-	-	-	-	-	-	-	-	-	-	-	217	85	245	152	-	-	-	-	462	174
Mar	-	-	-	-	-	-	-	-	-	-	-	-	154	66	37	19	-	-	-	-	191	69
Apr	46	26	16	10	0	0	0	0	0	0	6	4	2	3	39	32	38	13	473	217	620	221
May	74	41	26	20	9	7	1	1	2	2	23	18	0	0	3	4	67	38	36	19	241	65
Jun	260	84	370	111	146	126	11	6	101	30	6	3	66	44	111	84	3	3	67	41	1140	216
Jul	431	109	166	61	3	4	158	79	221	76	12	9	3	3	73	41	133	78	29	21	1231	189
Aug	1085	172	424	119	35	30	109	99	52	16	0	0	22	15	512	194	410	263	1299	483	3947	628
Sep	269	65	228	82	26	16	89	36	91	32	0	0	34	20	536	200	286	88	878	342	2437	423
Oct	107	43	0	0	0	0	0	0	11	17	0	0	120	71	167	99	47	34	8	5	460	134
Nov	-	-	-	-	-	-	-	-	-	-	-	-	271	236	200	72	-	-	-	-	471	246
Dec	-	-	-	-	-	-	-	-	-	-	-	-	97	77	17	24	-	-	-	-	114	80
Total	2271	239	1230	193	220	130	367	132	478	90	46	21	1643	462	2460	414	984	293	2791	632	12491	1004

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-5. Clipped Adipose (CA) and unclipped adipose (UA) Coho[1] kept and released by month[3], effort, and mark type in the SG creel survey, 2008.

Month	Effort	SE[4]	Coho CA Kept	SE	Coho UA Kept	SE	Coho Un-known Kept	SE	Monthly Coho Kept	Monthly Coho Kept SE	Coho CA Rel[2]	SE	Coho UA Rel[2]	SE	Coho Un-known Rel[2]	SE	Monthly Coho Rel[2]	Monthly Coho Rel[2] SE
Jan	1656	512	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb	882	221	0	0	0	0	0	0	0	0	0	0	0	0	15	26	15	26
Mar	1470	174	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr	2834	197	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	5382	496	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	10712	1782	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	19398	1011	72	40	0	0	0	0	72	40	0	0	32	32	93	59	125	67
Aug	25016	1397	421	125	2	3	0	0	423	125	3	3	1677	308	392	205	2072	370
Sep	16521	1194	386	100	174	92	0	0	561	136	0	0	1890	364	874	287	2764	463
Oct	5416	429	35	27	57	27	0	0	92	39	0	0	131	45	371	183	502	188
Nov	1086	482	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec	530	195	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	90904	2942	915	167	234	96	0	0	1148	193	3	3	3730	480	1745	402	5478	626

[1]21 unidentified salmon were kept, and 4595 unidentified salmon were released in SG in 2008 and were not included.

[2]Rel = Released.

[3]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

[4]SE = Standard Error

Appendix D-6. Clipped adipose (CA) and unclipped adipose (UA) Coho[1] kept and released by PFMA[3], effort, and species in the SG creel survey, 2008.

PFMA	Effort	SE[4]	Coho CA Kept	SE	Coho UA Kept	SE	Coho Un-known Kept	SE	Area Coho Kept	Area Coho Kept SE	Coho CA Rel[2]	SE	Coho UA Rel[2]	SE	Coho Un-known Rel[2]	SE	Area Coho Rel[2]	Area Coho Rel[2] SE
13	18547	813	120	44	45	25	0	0	165	51	0	0	2252	323	235	73	2487	331
14	7645	709	30	16	114	85	0	0	144	87	3	3	398	255	16	16	417	256
15	1591	193	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	3584	441	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	4748	245	2	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0
18	2542	223	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	12520	859	17	18	7	6	0	0	24	19	0	0	43	33	3	3	46	33
20 (SG)	30839	2484	616	149	68	36	0	0	684	153	0	0	1007	244	1215	353	2222	429
28	4948	338	105	55	0	0	0	0	105	55	0	0	24	21	251	177	275	178
29	3940	356	24	17	0	0	0	0	24	17	0	0	5	5	26	23	31	23
Total	90904	2942	915	167	234	96	0	0	1148	193	3	3	3730	480	1745	402	5478	626

[1]21 unidentified salmon were kept, and 4595 unidentified salmon were released in SG in 2008 and were not included.

[2]Rel = Released.

[3]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[4] SE = Standard Error

Appendix D-7. Sockeye kept by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	43	34	0	0	0	0	0	0	0	0	0	0	0	0	36	37	0	0	0	0	79	50
Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	43	34	0	0	0	0	0	0	0	0	0	0	0	0	36	37	0	0	0	0	79	50

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-8. Sockeye released by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug	167	58	0	0	0	0	0	0	0	0	0	0	0	0	21	22	0	0	0	0	188	62
Sep	41	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	29
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	207	65	0	0	0	0	0	0	0	0	0	0	0	0	21	22	0	0	0	0	228	69

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-9. Pink kept by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	467	208	0	0	0	0	0	0	0	0	0	0	0	0	36	37	0	0	0	0	504	211
Aug	1638	402	15	13	0	0	0	0	0	0	0	0	0	0	42	31	0	0	0	0	1695	403
Sep	50	22	0	0	0	0	0	0	0	0	0	0	6	7	0	0	0	0	0	0	57	23
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	2156	453	15	13	0	0	0	0	0	0	0	0	6	7	78	48	0	0	0	0	2256	456

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-10. Pink released by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	85	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85	68
Aug	87	57	0	0	0	0	0	0	0	0	0	0	0	0	86	51	0	0	0	0	173	77
Sep	87	78	171	166	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	257	183
Oct	22	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	22
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	282	120	171	166	0	0	0	0	0	0	0	0	0	0	86	51	0	0	0	0	538	211

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-11. Chum kept by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug	103	45	0	0	2	2	1	1	0	0	0	0	0	0	21	22	0	0	0	0	127	50
Sep	223	66	0	0	0	0	0	0	0	0	0	0	24	19	134	65	0	0	0	0	381	95
Oct	2496	478	0	0	0	0	0	0	0	0	14	11	0	0	37	24	0	0	0	0	2548	479
Nov	-	-	-	-	-	-	-	-	-	-	-	-	6	9	0	0	-	-	-	-	6	9
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	2822	485	0	0	2	2	1	1	0	0	14	11	29	21	192	73	0	0	0	0	3061	491

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-12. Chum released by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct	148	62	0	0	0	0	0	0	0	0	0	0	0	0	221	226	0	0	0	0	369	234
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	148	62	0	0	0	0	0	0	0	0	0	0	0	0	221	226	0	0	0	0	369	234

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMAs 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-13. All salmon[1] kept by month[2] and PFMA in the SG creel survey, 2008.

Month	PFMA																		Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[3]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	482	84	503	164	-	-	-	-	985	184
Feb	-	-	-	-	-	-	-	-	-	-	-	-	505	124	232	81	-	-	-	-	737	148
Mar	-	-	-	-	-	-	-	-	-	-	-	-	214	68	61	23	-	-	-	-	275	72
Apr	0	0	17	5	135	96	127	70	81	28	48	28	82	20	68	39	45	15	236	91	838	162
May	18	9	6	9	36	18	2	2	16	7	0	0	57	36	8	5	119	55	67	28	329	76
Jun	638	118	82	28	79	55	12	15	38	12	6	3	13	10	1583	416	28	13	23	22	2501	438
Jul	3204	559	111	49	41	18	134	52	300	91	139	32	77	36	1367	238	302	107	44	19	5721	630
Aug	2955	437	161	50	32	17	72	51	66	20	13	7	132	51	5042	593	118	59	291	118	8880	754
Sep	654	100	620	208	17	14	8	7	56	23	112	67	106	40	2417	383	342	126	92	53	4425	475
Oct	2537	479	0	0	0	0	0	0	11	6	14	11	345	98	130	42	8	8	1	1	3046	491
Nov	-	-	-	-	-	-	-	-	-	-	-	-	800	354	315	68	-	-	-	-	1115	360
Dec	-	-	-	-	-	-	-	-	-	-	-	-	129	67	170	95	-	-	-	-	299	116
Total	10006	870	997	221	340	116	355	103	567	102	331	80	2943	417	11897	882	961	186	754	164	29151	1364

[1]All salmon does not include Atlantics or Steelhead

[2]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

[3] SE = Standard Error

Appendix D-14. All salmon[1] released by month[2] and PFMA in the SG creel survey, 2008.

Month	PFMA																		Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[3]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	808	373	522	213	-	-	-	-	1330	429
Feb	-	-	-	-	-	-	-	-	-	-	-	-	234	85	274	155	-	-	-	-	507	177
Mar	-	-	-	-	-	-	-	-	-	-	-	-	154	66	49	22	-	-	-	-	203	70
Apr	46	26	16	10	0	0	0	0	17	10	20	7	14	10	52	32	42	13	479	217	687	222
May	74	41	26	20	9	7	1	1	34	15	45	25	0	0	3	4	67	38	36	19	296	69
Jun	282	87	370	111	146	126	11	6	107	30	22	10	66	44	139	90	3	3	67	41	1213	220
Jul	958	287	166	61	3	4	158	79	262	80	30	13	4	4	128	59	217	99	68	34	1996	337
Aug	2758	341	510	127	35	30	161	111	79	25	0	0	92	47	1372	295	597	312	1304	483	6908	753
Sep	1833	240	1343	507	26	16	89	36	104	34	0	0	111	60	2172	428	418	127	882	342	6979	798
Oct	661	155	9	15	0	0	0	0	11	17	14	11	336	134	2146	619	47	34	8	5	3232	654
Nov	-	-	-	-	-	-	-	-	-	-	-	-	465	262	754	198	-	-	-	-	1219	328
Dec	-	-	-	-	-	-	-	-	-	-	-	-	126	82	223	242	-	-	-	-	348	255
Total	6612	539	2441	539	220	130	419	141	615	98	132	32	2410	502	7834	913	1391	355	2845	633	24918	1497

[1]All salmon does not include Atlantics or Steelhead

[1]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-15. Halibut kept by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	5	5	0	0	-	-	-	-	5	5
Mar	-	-	-	-	-	-	-	-	-	-	-	-	163	47	14	10	-	-	-	-	177	49
Apr	0	0	0	0	0	0	0	0	0	0	0	0	185	46	22	10	0	0	0	0	207	47
May	4	4	0	0	0	0	0	0	0	0	0	0	425	96	84	55	0	0	0	0	513	111
Jun	31	24	0	0	0	0	0	0	0	0	0	0	136	49	82	72	0	0	0	0	249	91
Jul	37	37	0	0	0	0	0	0	0	0	0	0	537	196	110	72	0	0	0	0	684	212
Aug	25	25	10	7	0	0	0	0	0	0	0	0	76	36	53	39	0	0	0	0	165	59
Sep	0	0	7	6	0	0	0	0	0	0	0	0	525	142	0	0	0	0	0	0	532	142
Oct	0	0	0	0	0	0	0	0	0	0	0	0	383	134	28	17	0	0	0	0	411	135
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	8	11	0	0	-	-	-	-	8	11
Total	98	50	17	9	0	0	0	0	0	0	0	0	2443	306	392	124	0	0	0	0	2951	335

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-16. Halibut released by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	16	19	-	-	-	-	16	19
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	15	12	0	0	0	0	0	0	15	12
Jun	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	4	4
Jul	0	0	0	0	0	0	0	0	0	0	0	0	24	24	36	37	0	0	0	0	60	44
Aug	0	0	0	0	0	0	0	0	0	0	13	7	41	33	21	22	0	0	0	0	75	40
Sep	0	0	0	0	0	0	0	0	0	0	0	0	4	3	0	0	0	0	0	0	4	3
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	10	0	0	0	0	9	10
Nov	-	-	-	-	-	-	-	-	-	-	-	-	22	27	0	0	-	-	-	-	22	27
Dec	-	-	-	-	-	-	-	-	-	-	-	-	8	11	0	0	-	-	-	-	8	11
Total	0	0	0	0	0	0	0	0	0	0	13	7	117	51	83	48	0	0	0	0	212	71

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-17. Lingcod kept by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	10	10	0	0	-	-	-	-	10	10
Mar	-	-	-	-	-	-	-	-	-	-	-	-	3	2	0	0	-	-	-	-	3	2
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	48	26	0	0	50	37	44	34	109	34	43	16	12	7	57	51	0	0	0	0	363	85
Jul	445	257	68	60	0	0	114	71	147	50	16	12	35	16	0	0	0	0	0	0	824	279
Aug	131	60	71	46	91	29	374	148	52	18	0	0	148	73	149	80	0	0	0	0	1015	201
Sep	139	49	52	26	7	5	114	40	75	37	135	114	66	39	161	82	95	29	0	0	844	168
Oct	0	0	0	0	0	0	0	0	0	0	0	0	16	8	0	0	0	0	0	0	16	8
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	762	270	190	80	148	48	646	172	384	73	194	116	290	86	367	125	95	29	0	0	3075	393

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-18. Legal Lingcod released by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	38	16	0	0	-	-	-	-	38	16
Apr	0	0	0	0	0	0	0	0	50	24	0	0	1	1	38	46	8	0	0	0	97	52
May	4	4	0	0	0	0	0	0	13	6	45	35	3	2	5	6	60	65	24	24	154	79
Jun	11	10	0	0	18	21	15	10	25	15	50	22	0	0	103	86	0	0	0	0	221	94
Jul	0	0	0	0	0	0	229	176	48	26	0	0	3	3	127	67	0	0	0	0	408	190
Aug	0	0	84	70	0	0	0	0	9	6	45	22	0	0	86	52	0	0	0	0	224	90
Sep	0	0	0	0	0	0	4	4	61	45	0	0	3	3	40	33	0	0	0	0	109	56
Oct	0	0	0	0	0	0	0	0	4	2	0	0	5	4	28	22	0	0	0	0	36	22
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	51	71	-	-	-	-	51	71
Total	16	11	84	70	18	21	248	176	210	60	140	47	54	17	478	153	68	65	24	24	1339	266

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-19. Sub-legal Lingcod released by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	15	15	0	0	-	-	-	-	15	15
Feb	-	-	-	-	-	-	-	-	-	-	-	-	33	21	3	4	-	-	-	-	36	22
Mar	-	-	-	-	-	-	-	-	-	-	-	-	55	28	42	30	-	-	-	-	96	41
Apr	7	5	3	1	0	0	44	43	161	67	71	33	77	32	98	70	0	0	0	0	460	115
May	101	82	44	27	155	109	5	6	189	86	99	57	108	70	162	110	0	0	0	0	863	217
Jun	246	93	109	35	168	79	152	58	444	130	215	170	183	75	791	316	7	5	2	2	2316	413
Jul	843	315	774	457	182	67	382	121	431	113	238	83	174	53	1131	345	49	38	9	8	4213	686
Aug	697	260	66	45	125	48	1807	634	70	25	144	51	554	138	1366	322	0	0	0	0	4828	775
Sep	89	41	193	70	47	30	416	111	187	54	0	0	174	80	668	239	286	88	2	2	2063	306
Oct	0	0	0	0	0	0	0	0	0	0	14	11	206	92	9	10	0	0	0	0	229	93
Nov	-	-	-	-	-	-	-	-	-	-	-	-	73	72	91	57	-	-	-	-	163	92
Dec	-	-	-	-	-	-	-	-	-	-	-	-	75	66	34	47	-	-	-	-	109	81
Total	1983	429	1189	467	677	160	2805	659	1481	212	781	207	1724	243	4396	634	342	96	13	8	15393	1192

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-20. Yelloweye rockfish kept by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	42	31	0	0	4	5	1	1	17	14	0	0	0	0	0	0	0	0	0	0	64	34
Jul	0	0	33	30	14	10	19	9	42	29	0	0	0	0	0	0	0	0	0	0	108	44
Aug	0	0	42	30	86	36	239	96	0	0	0	0	9	7	0	0	0	0	0	0	376	107
Sep	0	0	12	7	24	16	90	37	10	7	0	0	2	3	0	0	0	0	0	0	138	41
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	42	31	88	43	128	41	349	103	68	33	0	0	11	8	0	0	0	0	0	0	686	127

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 15, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-21. Yelloweye rockfish released by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70	76	0	0	0	0	70	76
Jun	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Jul	0	0	4	3	0	0	0	0	16	13	0	0	0	0	0	0	0	0	0	0	20	14
Aug	0	0	0	0	20	18	27	17	0	0	0	0	0	0	0	0	0	0	0	0	47	25
Sep	0	0	0	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	8	8
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	0	0	4	3	23	18	35	19	16	13	0	0	0	0	70	76	0	0	0	0	148	82

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-22. Quillback rockfish kept by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	8	7	0	0	-	-	-	-	8	7
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9	0	0	0	0	9	9
May	0	0	0	0	0	0	182	147	0	0	0	0	2	2	0	0	0	0	0	0	183	147
Jun	20	20	0	0	9	6	43	22	12	7	6	3	36	29	107	77	0	0	0	0	231	88
Jul	58	59	8	8	92	65	113	36	105	49	0	0	41	29	146	93	0	0	0	0	563	145
Aug	82	45	6	5	110	50	367	198	29	15	13	7	46	16	21	22	0	0	0	0	673	212
Sep	18	13	5	3	0	0	293	107	30	16	0	0	69	39	229	112	2	2	1	1	646	161
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	177	78	19	10	210	82	997	272	176	53	18	8	202	59	511	166	2	2	1	1	2314	348

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-23. Quillback rockfish released by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	4	3	0	0	-	-	-	-	4	3
Mar	-	-	-	-	-	-	-	-	-	-	-	-	38	25	0	0	-	-	-	-	38	25
Apr	0	0	0	0	0	0	0	0	34	21	89	57	7	6	0	0	0	0	0	0	130	61
May	22	16	2	2	0	0	45	46	3	4	0	0	5	5	0	0	180	231	71	86	329	251
Jun	7	8	0	0	100	58	257	113	95	46	20	22	11	9	0	0	0	0	0	0	491	137
Jul	0	0	29	28	95	46	515	174	179	100	0	0	0	0	109	83	7	5	5	3	939	223
Aug	19	18	0	0	64	33	1025	409	46	29	26	16	82	29	0	0	0	0	0	0	1261	413
Sep	0	0	23	12	7	6	1058	338	50	32	0	0	52	36	27	29	2	2	1	1	1221	343
Oct	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	5	5
Nov	-	-	-	-	-	-	-	-	-	-	-	-	6	9	0	0	-	-	-	-	6	9
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	48	26	54	31	266	81	2901	572	407	120	136	63	210	55	136	87	189	231	77	86	4424	652

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-24. Copper rockfish kept by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	12	7	21	12	97	62	0	0	23	11	2	2	155	65
Jul	1	0	0	0	0	0	0	0	125	52	54	32	173	103	73	52	96	101	5	7	526	165
Aug	27	20	19	13	0	0	52	49	12	13	0	0	19	11	149	72	0	0	0	0	279	92
Sep	0	0	0	0	0	0	0	0	57	34	0	0	44	22	27	29	0	0	0	0	128	50
Oct	0	0	0	0	0	0	0	0	0	0	0	0	10	7	0	0	0	0	0	0	10	7
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	28	20	19	13	0	0	52	49	205	64	75	35	344	123	248	93	119	101	8	7	1098	206

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-25. Copper rockfish released by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	3	2	0	0	-	-	-	-	3	2
Apr	0	0	0	0	0	0	0	0	399	172	239	166	3	3	0	0	0	0	0	0	641	239
May	0	0	0	0	0	0	0	0	26	11	0	0	0	0	0	0	0	0	0	0	26	11
Jun	0	0	14	15	0	0	23	15	278	105	81	33	0	0	0	0	0	0	0	0	395	112
Jul	0	0	0	0	0	0	11	7	339	154	93	73	18	19	0	0	0	0	0	0	461	171
Aug	0	0	0	0	0	0	0	0	118	63	158	96	0	0	0	0	0	0	0	0	276	115
Sep	0	0	0	0	0	0	0	0	14	10	0	0	1	2	0	0	0	0	0	0	15	11
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	0	0	14	15	0	0	34	16	1174	262	571	208	25	19	0	0	0	0	0	0	1818	335

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-26. China rockfish kept by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0	0	16	12	0	0	0	0	0	0	16	12
Sep	0	0	0	0	0	0	16	14	0	0	0	0	4	4	0	0	0	0	0	0	20	14
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	0	0	0	0	0	0	16	14	0	0	0	0	20	12	0	0	0	0	0	0	36	19

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-27. China rockfish released by month[1] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[2]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	15	13	0	0	0	0	0	0	15	13
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	49	35	0	0	0	0	33	22	0	0	0	0	0	0	82	41
Sep	0	0	0	0	0	0	0	0	0	0	0	0	7	9	0	0	0	0	0	0	7	9
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	0	0	0	0	0	0	49	35	0	0	0	0	55	27	0	0	0	0	0	0	103	44

[1] In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[2] SE = Standard Error

Appendix D-28. Other rockfish[1] kept by month[2] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[3]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	0	0	44	52	-	-	-	-	44	52
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	60	46	8	10	-	-	-	-	68	47
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	5	4	0	0	0	0	30	13	0	0	0	0	0	0	0	0	0	0	35	14
Jun	0	0	0	0	0	0	0	0	19	9	0	0	23	26	25	26	0	0	0	0	67	38
Jul	1	1	0	0	0	0	0	0	186	78	100	48	14	9	18	19	0	0	0	0	319	94
Aug	0	0	0	0	24	16	13	12	50	19	38	16	12	11	116	55	0	0	0	0	253	64
Sep	11	11	75	57	0	0	0	0	20	13	0	0	13	13	135	86	0	0	0	0	253	106
Oct	0	0	0	0	0	0	0	0	0	0	0	0	28	16	0	0	0	0	0	0	28	16
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	11	11	80	57	24	16	13	12	304	82	138	51	149	59	346	120	0	0	0	0	1067	176

[1]Other rockfish means other than Tiger, Yelloweye, China, Copper, and Quillback.

[2]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

[3] SE = Standard Error

Appendix D-29. Other rockfish[1] released by month[2] and PFMA in the SG creel survey, 2008.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE[3]	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	75	75	22	26	-	-	-	-	97	80
Feb	-	-	-	-	-	-	-	-	-	-	-	-	18	10	7	6	-	-	-	-	25	11
Mar	-	-	-	-	-	-	-	-	-	-	-	-	52	31	8	10	-	-	-	-	60	33
Apr	0	0	0	0	0	0	0	0	205	93	6	3	44	22	26	18	0	0	0	0	281	97
May	80	65	90	61	0	0	0	0	189	98	229	140	78	33	37	38	0	0	0	0	703	199
Jun	441	134	255	157	0	0	19	16	137	44	44	18	291	137	513	222	0	0	0	0	1700	337
Jul	579	290	822	475	0	0	0	0	115	65	450	235	236	93	530	176	0	0	0	0	2731	639
Aug	475	141	311	109	0	0	0	0	111	35	175	56	380	153	818	212	0	0	0	0	2271	323
Sep	227	101	468	236	0	0	0	0	257	88	54	46	245	87	320	174	0	0	0	0	1571	337
Oct	7	7	0	0	0	0	0	0	11	6	0	0	134	87	56	28	0	0	0	0	208	91
Nov	-	-	-	-	-	-	-	-	-	-	-	-	44	42	122	53	-	-	-	-	166	68
Dec	-	-	-	-	-	-	-	-	-	-	-	-	9	11	34	47	-	-	-	-	43	49
Total	1810	370	1946	567	0	0	19	16	1023	183	957	283	1609	276	2492	405	0	0	0	0	9856	901

[1]Other rockfish means other than Tiger, Yelloweye, China, Copper, and Quillback.
[2]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.
[3] SE = Standard Error

Appendix E-1. Kept and released catch per unit effort (CPUE) for salmon, Lingcod, and Halibut by month[3] in the SG creel survey, 2008.

Month	Kept								Released							
	Chinook	Coho	Sockeye	Pink	Chum	Total Salmon[1] Kept	Halibut	Lingcod	Chinook	Coho	Sockeye	Pink	Chum	Total Salmon[1] Rel.[2]	Halibut	Lingcod
Jan	0.60	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.80	0.00	0.00	0.00	0.00	0.80	0.00	0.01
Feb	0.84	0.00	0.00	0.00	0.00	0.84	0.01	0.01	0.55	0.02	0.00	0.00	0.00	0.56	0.00	0.04
Mar	0.19	0.00	0.00	0.00	0.00	0.19	0.12	0.00	0.14	0.00	0.00	0.00	0.00	0.14	0.01	0.09
Apr	0.30	0.00	0.00	0.00	0.00	0.30	0.07	0.00	0.24	0.00	0.00	0.00	0.00	0.24	0.00	0.20
May	0.06	0.00	0.00	0.00	0.00	0.06	0.10	0.00	0.05	0.00	0.00	0.00	0.00	0.05	0.00	0.19
Jun	0.23	0.00	0.00	0.00	0.00	0.23	0.02	0.03	0.11	0.00	0.00	0.00	0.00	0.11	0.00	0.24
Jul	0.26	0.00	0.00	0.03	0.00	0.29	0.04	0.04	0.07	0.01	0.00	0.00	0.00	0.08	0.00	0.24
Aug	0.26	0.02	0.00	0.07	0.01	0.35	0.01	0.04	0.17	0.08	0.01	0.01	0.00	0.26	0.00	0.20
Sep	0.21	0.03	0.00	0.00	0.02	0.27	0.03	0.05	0.16	0.17	0.00	0.02	0.00	0.35	0.00	0.13
Oct	0.07	0.02	0.00	0.00	0.47	0.56	0.08	0.00	0.09	0.09	0.00	0.00	0.07	0.26	0.00	0.05
Nov	1.02	0.00	0.00	0.00	0.01	1.03	0.00	0.00	0.65	0.00	0.00	0.00	0.00	0.65	0.02	0.15
Dec	0.56	0.00	0.00	0.00	0.00	0.56	0.01	0.00	0.22	0.00	0.00	0.00	0.00	0.22	0.01	0.30
Total	0.25	0.01	0.00	0.02	0.03	0.32	0.03	0.03	0.15	0.06	0.00	0.01	0.00	0.22	0.00	0.18

[1]Total includes species listed in table only.

[2]Rel. = released.

[3]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Appendix E-2. Kept and released CPUE for Tiger, Yelloweye, China, Copper, Quillback and other rockfish by month[4] in the SG creel survey, 2008.

Month	Kept							Released						
	Tiger	Yellow-eye	China	Copper	Quill-back	All Other Rockfish[1]	Rockfish Total[2] Kept	Tiger	Yellow-eye	China	Copper	Quill-back	All Other Rockfish[1]	Rockfish Total[2] Rel.[3]
Jan	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.06	0.06
Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.03
Mar	0.00	0.00	0.00	0.00	0.01	0.05	0.05	0.00	0.00	0.00	0.00	0.03	0.04	0.07
Apr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.23	0.05	0.10	0.38
May	0.00	0.00	0.00	0.00	0.03	0.01	0.04	0.00	0.01	0.00	0.00	0.06	0.13	0.21
Jun	0.00	0.01	0.00	0.01	0.02	0.01	0.05	0.00	0.00	0.00	0.04	0.05	0.16	0.24
Jul	0.00	0.01	0.00	0.03	0.03	0.02	0.08	0.00	0.00	0.00	0.02	0.05	0.14	0.21
Aug	0.00	0.02	0.00	0.01	0.03	0.01	0.06	0.00	0.00	0.00	0.01	0.05	0.09	0.16
Sep	0.00	0.01	0.00	0.01	0.04	0.02	0.07	0.00	0.00	0.00	0.00	0.07	0.10	0.17
Oct	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.04	0.04
Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.15	0.16
Dec	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08
Total	0.00	0.01	0.00	0.01	0.03	0.01	0.06	0.00	0.00	0.00	0.02	0.05	0.11	0.18

[1]Other rockfish means other than Tiger, Yelloweye, China, Copper, and Quillback.

[2]Total includes species listed in table only.

[3]Rel. = released.

[4]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Appendix E-3. Kept and released CPUE for all salmon, all groundfish, and all rockfish by month[1] in the SG creel survey, 2008.

Month	Kept			Released		
	Salmon	Groundfish	Rockfish	Salmon	Groundfish	Rockfish
Jan	0.60	0.09	0.03	0.80	0.07	0.06
Feb	0.84	0.02	0.00	0.57	0.04	0.03
Mar	0.19	0.23	0.05	0.14	0.88	0.07
Apr	0.30	0.18	0.00	0.24	0.41	0.38
May	0.06	0.29	0.04	0.05	0.63	0.21
Jun	0.23	0.18	0.05	0.11	0.62	0.24
Jul	0.29	0.21	0.08	0.10	0.75	0.21
Aug	0.35	0.20	0.06	0.28	0.82	0.16
Sep	0.27	0.16	0.07	0.42	0.43	0.17
Oct	0.56	0.08	0.01	0.60	0.47	0.04
Nov	1.03	0.00	0.00	1.12	0.30	0.16
Dec	0.56	0.03	0.00	0.66	0.33	0.08
Total	0.32	0.18	0.06	0.27	0.63	0.18

[1]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Appendix E-4. Kept and released CPUE for salmon, Lingcod, and Halibut by PFMA[3] in the SG creel survey, 2008.

PFMA	Kept								Released							
	Chinook	Coho	Sockeye	Pink	Chum	Total Salmon[1] Kept	Halibut	Lingcod	Chinook	Coho	Sockeye	Pink	Chum	Total Salmon[1] Rel.[2]	Halibut	Lingcod
13	0.26	0.01	0.00	0.12	0.15	0.54	0.01	0.04	0.13	0.13	0.01	0.02	0.01	0.29	0.00	0.11
14	0.11	0.02	0.00	0.00	0.00	0.13	0.00	0.02	0.16	0.05	0.00	0.02	0.00	0.24	0.00	0.17
15	0.21	0.00	0.00	0.00	0.00	0.21	0.00	0.09	0.14	0.00	0.00	0.00	0.00	0.14	0.00	0.44
16	0.10	0.00	0.00	0.00	0.00	0.10	0.00	0.18	0.10	0.00	0.00	0.00	0.00	0.10	0.00	0.85
17	0.12	0.00	0.00	0.00	0.00	0.12	0.00	0.08	0.13	0.00	0.00	0.00	0.00	0.13	0.00	0.36
18	0.12	0.00	0.00	0.00	0.01	0.13	0.00	0.08	0.05	0.00	0.00	0.00	0.00	0.05	0.01	0.36
19	0.23	0.00	0.00	0.00	0.00	0.24	0.20	0.02	0.16	0.00	0.00	0.00	0.00	0.16	0.01	0.14
20 (SG)	0.35	0.02	0.00	0.00	0.01	0.39	0.01	0.01	0.10	0.07	0.00	0.00	0.01	0.18	0.00	0.16
28	0.17	0.02	0.00	0.00	0.00	0.19	0.00	0.02	0.22	0.06	0.00	0.00	0.00	0.27	0.00	0.08
29	0.19	0.01	0.00	0.00	0.00	0.19	0.00	0.00	0.71	0.01	0.00	0.00	0.00	0.72	0.00	0.01
Total	0.25	0.01	0.00	0.02	0.03	0.32	0.03	0.03	0.15	0.06	0.00	0.01	0.00	0.22	0.00	0.18

[1]Total includes species listed in table only.

[2]Rel. = released.

[3]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Appendix E-5. Kept and released CPUE for Tiger, Yelloweye, China, Copper, Quillback and other rockfish by PFMA[4] in the SG creel survey, 2008.

PFMA	Kept							Released						
	Tiger	Yellow-eye	China	Copper	Quill-back	All Other Rockfish[1]	Rockfish Total[2] Kept	Tiger	Yellow-eye	China	Copper	Quill-back	All Other Rockfish[1]	Rockfish Total[2] Rel.[3]
13	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.10	0.10
14	0.00	0.01	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.01	0.25	0.26
15	0.00	0.08	0.00	0.00	0.13	0.02	0.23	0.00	0.01	0.00	0.00	0.17	0.00	0.18
16	0.00	0.10	0.00	0.01	0.28	0.00	0.40	0.00	0.01	0.01	0.01	0.81	0.01	0.85
17	0.00	0.01	0.00	0.04	0.04	0.06	0.16	0.00	0.00	0.00	0.25	0.09	0.22	0.55
18	0.00	0.00	0.00	0.03	0.01	0.05	0.09	0.00	0.00	0.00	0.22	0.05	0.38	0.65
19	0.00	0.00	0.00	0.03	0.02	0.01	0.06	0.00	0.00	0.00	0.00	0.02	0.13	0.15
20 (SG)	0.00	0.00	0.00	0.01	0.02	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.08	0.09
28	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.04	0.00	0.04
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02
Total	0.00	0.01	0.00	0.01	0.03	0.01	0.06	0.00	0.00	0.00	0.02	0.05	0.11	0.18

[1]Other rockfish means other than Tiger, Yelloweye, China, Copper, and Quillback.

[2]Total includes species listed in table only.

[3]Rel. = released.

[4]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Appendix E-6. Kept and released CPUE for all salmon, all groundfish, and all rockfish by PFMA[1] in the SG creel survey, 2008.

PFMA	Kept			Released		
	Salmon	Groundfish	Rockfish	Salmon	Groundfish	Rockfish
13	0.54	0.07	0.01	0.36	0.15	0.10
14	0.13	0.12	0.03	0.32	0.42	0.26
15	0.21	0.20	0.23	0.14	0.60	0.18
16	0.10	0.49	0.40	0.12	1.29	0.85
17	0.12	0.24	0.16	0.13	0.62	0.55
18	0.13	0.27	0.09	0.05	1.10	0.65
19	0.24	0.35	0.06	0.19	1.45	0.15
20 (SG)	0.39	0.10	0.04	0.25	0.69	0.09
28	0.19	0.45	0.02	0.28	0.14	0.04
29	0.19	0.15	0.00	0.72	0.05	0.02
Total	0.32	0.18	0.06	0.27	0.63	0.18

[1]In 2008 only PFMA 19 and 20(SG) were surveyed throughout the year. All other areas (PFMA's 13 to 18, 28 and 29) were surveyed between April and October.

Appendix F. Taxonomic reference of species reported.

*Listed alphabetically by common name.

Atlantic Salmon	*Salmo salar*
Black Rockfish	*Sebastes melanops*
Cabezon	*Scorpaenichthys marmoratus*
Canary Rockfish	*Sebastes pinniger*
China Rockfish	*Sebastes nebulosus*
Chinook Salmon	*Oncorhynchus tshawytscha*
Chum Salmon	*Oncorhynchus keta*
Coho Salmon	*Oncorhynchus kisutch*
Copper Rockfish	*Sebastes caurinus*
Dogfish (Spiny Dogfish)	*Squalus acanthias*
English Sole	*Parophrys vetulus*
Flatfishes	*Heterosomata, Plueronectiforme spp.*
Flounder	*Bothidae, Paralichthyidae, Pleuronectidae spp.*
Greenling	*Hexagrammos, Oxylebius spp.*
Halibut	*Hippoglossus stenolepis*
Herring (Pacific Herring)	*Clupea pallasi*
Lingcod	*Ophiodon elongatus*
Not Identified Salmonids	*Salmoninae spp.*
Other Rockfish	*Sebastes, Sebastolobus spp.*
Other sole	*Soleidae, Achiridae, Cynoglossidae, Pleuronectidae spp.*
Pacific Cod	*Gadus macrocephalus*
Pacific Sandab	*Citharichthys sordidus*
Pacific Tomcod	*Microgadus proximus*
Perches	*Embiotocidae spp.*
Pink Salmon	*Oncorhynchus gorbuscha*
Quillback Rockfish	*Sebastes maliger*
Ratfish	*Hydrolagus colliei*
Red Irish Lord	*Hemilepidotus hemilepidotus*
Redstripe (Redbanded) Rockfish	*Sebastes babcocki*
Rock Sole	*Lepidopsetta bilineata, Lepidopsetta polyxystra*
Sculpins	*Cottoidei spp.*
Skates	*Rajidae spp.*
Sockeye Salmon	*Oncorhynchus nerka*
Starry flounder	*Platichthys stellatus*
Tiger Rockfish	*Sebastes nigrocinctus*
Vermillion Rockfish	*Sebastes miniatus*
Widow Rockfish	*Sebastes entomelas*
Yellow Eye Rockfish	*Sebastes rubberimus*
Yellow Tail Rockfish	*Sebastes flavidus*

Appendix G. Identified or grouped species[1] included in 'other groundfish' and 'other rockfish'.

Other Groundfish	Other Rockfish
Cabezon	Vermillion Rockfish
Flatfishes	Widow Rockfish
Flounder	Other Rockfish
Other sole	
Other Groundfish	
Pacific Cod	
Pacific Sandab	
Perches	
Ratfish	
Red Irish Lord	
Sculpins	
Skates	

[1]Any species not represented in this list or in Tables 18 to 21 for groundfish or Tables 22 to 25 for rockfish had zero (0) catch for 2008.

Appendix H. Tidal effort statistics and sport catch estimates of Chinook and Coho for the SG, 1960 to 1983.

Year	Effort[1] (boat trips)	Catch (Pieces)	
		Chinook	Coho
1960	189,150	83,000	238,000
1961	199,935	63,000	152,000
1962	205,547	86,000	167,000
1963	247,590	65,000	199,000
1964	198,120	51,000	182,000
1965	250,020	53,000	175,000
1966	259,100	80,000	249,000
1967	254,500	115,000	200,000
1968	265,030	150,000	250,000
1969	281,475	185,000	200,000
1970	306,255	220,000	500,000
1971	341,123	255,000	800,000
1972	300,349	287,000	335,000
1973	293,141	272,000	373,000
1974	443,441	269,000	772,000
1975	334,490	398,000	454,000
1976	340,729	490,000	415,000
1977	363,350	372,000	682,000
1978	369,035	500,000	1,103,000
1979	404,710	350,000	708,735
1980	510,400	204,100	393,500
1981	494,604	197,239	317,091
1982	559,395	124,390	411,686
1983	435,335	139,982	344,664

SOURCE: Hardie et al 2003.

[1]Effort prior to 1980 (the start of the creel survey) may not represent boat trips.

Appendix I. Species and PFMA specific tidal regulations for major finfish in the SG, 2008.

- Anglers are reminded that there are 164 Rockfish Conservation Areas (RCA's) coast wide and that fin fishing is prohibited in these areas. Maps and descriptions of RCA's are available on the DFO website and at local DFO offices.

- **Lingcod:**

Effective June 01 to September 30, hook and line fishing and spear fishing, you may retain one (1) Lingcod per day in PFMA's 13 to 19, and sub-PFMA's 20-5, 20-6, 20-7, and 29-5. PFMA 28 and the balance of PFMA 29 will remain closed due to continued concern for low abundance. For one (1) year only, the minimum size limit for Lingcod has been reduced to 60cm from 65cm. This one (1) year pilot has been implemented to evaluate the impact on total rockfish mortality. To summarize, for the PFMA's described:

- One (1) Lingcod per day, minimum size limit is 60cm;
- Ten (10) Lingcod per year, minimum size limit 60cm;
- Hook and line gear and spear fishing.

A recreational fishing mortality of 5,000 pieces has been determined as the allowable catch to ensure continued rebuilding of the Lingcod population within the Strait of Georgia. The effort and catch within the fishery will be monitored. If the monitoring program indicates that the allowable catch may be reached before September 30, the fishery will be closed.

- **Rockfish:**

Inshore rockfish are currently closed for fishing throughout the entire Strait of Georgia. To ensure that conservation requirements are met, the recreational rockfish fishery will operate concurrently with the Lingcod fishery. The rockfish fishery will open with the Lingcod fishery. The rockfish fishery will open June 01 and close September 30.

- One (1) rockfish per day;
- No size limit;
- Hook and line gear and spear fishing.

Effective October 01, the recreational fishery for Lingcod and rockfish by hook and line gear and spear fishing in PFMA's 13 to 19, and sub-PFMA's 20-5, 20-6, 20-7, and 29-5 is closed.

- **Halibut:**

Fishing for Halibut will remain closed effective February 01 to 29. The fishery will open March 01. In order to manage within domestic Halibut allocations, the following changes will be implemented in the 2008 recreational fishery:

- March 01 to 31: daily limit of one (1); possession limit of three (3).
- April 01 to May 31: daily limit of one (1); possession limit of two (2).
- June 01 to December 31: daily limit of two (2); possession limit of two (2).

Effective October 31 until December 31, fishing for Halibut recreationally is closed.
This action is necessary due to the recreational fishery for Halibut exceeding the recreational allowable catch.

- **Coho:**

In PFMA's 13 to 20 (SG), 28, and 29 you may retain two (2) adipose clipped Coho salmon per day, unless otherwise specified below:

Sub-PFMA's 13-20, 13-21, and a portion of 13-22 (east side of Stuart Island and a portion of Bute Inlet):
Effective August 15 until September 15, you may retain two (2) Coho per day, one (1) of which may be adipose unmarked (wild).

Portion of sub-PFMA 14-11 (Baynes Sound):
Effective September 01 to December 31, you may retain two (2) Coho per day (adipose marked or unmarked), one (1) of which may be unmarked.

PFMA 16-5 and a portion of sub-PFMA 16-6 (Sechelt Inlet and Porpoise Bay):
Effective June 20 to December 31, you may retain four (4) adipose marked Coho per day.

PFMA 18:

Effective November 01 until December 31 in a portion of sub-PFMA 18-8 (Seperation Point), you may retain two (2) Coho per day (adipose marked or unmarked).
Effective 01 November until 31 December in Cowichan Bay (in Sub-PFMA 18-8) and a portion of Satellite Channel (in Sub-PFMA 18-7), the daily limit for Coho will be two (2) per day, adipose marked or unmarked. The remaining portions of PFMA 18 will remain at two (2) adipose marked (hatchery) Coho per day.

PFMA 19:
Effective 01 October until 31 December, you may retain two (2) Coho per day, one (1) of which may be wild (adipose unmarked).

Sub-PFMA's 28-11 to 28-14 (Burrard Inlet East):
Effective 01 October until 31 March (2009), you may not retain Coho.

- **Chinook:**

Recreational Management actions were implemented to conserve early timed Fraser and lower Strait of Georgia Chinook stocks:

Sub-PFMA 13-2 and a portion of 13-4 (Yaculta/Wilby Shoal):
Effective 15 July until 31 August, this area will be closed to fishing for all finfish.

Sub-PFMA 13-22 (Bute Inlet):
Effective 31 July until 30 September, there is non-retention of Chinook.

Sub-PFMA 14-11 (Baynes Sound/Hart Creek):
Effective 01 May until 31 August, there is non-retention of Chinook.

A portion of sub-PFMA 14-13 (Kitty Coleman/Little River):
Effective 01 June until 30 June, there is non-retention of Chinook.

Sub-PFMA 14-14 (Comox Harbour):
Effective 31 July until 31 December, there is non-retention of Chinook.

A portion of sub-PFMA's 14-5 and 14-7 (Lambert Channel/Bowser):
Effective 15 June until 15 August, there is non-retention of Chinook.

A portion of sub-PFMA 15-2 (Algerine and Shearwater Passages):
Effective 15 June until 15 August, there is non-retention of Chinook.

A portion of sub-PFMA 15-6 (Toba Inlet):
Effective 29 May until 30 September, there is non-retention of Chinook.

Sub-PFMA 16-5 and a portion of 16-6 (Sechelt Inlet/Porpoise Bay):
Effective 01 July until 31 December, you may retain two (2) Chinook per day with a minimum size limit of 41 cm.

Sub-PFMA's 17-5 to 17-7, 17-9, 17-13 to 17-17, 17-18 to 17-20 and portions of 17-4 and 17-12 (Shingle Point/Schooner Cove):
Effective 01 August until 15 October, there is non-retention of Chinook.

Sub-PFMA's 18-6, 18-8, 18-10 and a portion of 18-7 (Satellite Channel/Cowichan Bay):
Effective 01 August until 15 October, there is non-retention of Chinook.

Sub-PFMA's 19-1 to 19-4 and 20-5 (Cadboro Pt./Sheringham Pt.):
Effective 11 March until 15 May, the daily limit is two (2) wild (adipose unmarked) or hatchery (adipose marked) Chinook per day between 45 and 67 cm in length.
Effective 01 April until 15 May, the daily limit is two (2) wild (adipose unmarked) or hatchery (adipose marked) Chinook per day between 45 and 67 cm in length or hatchery (adipose marked) only that are greater than 67 cm in length.
Effective 16 May until 31 December, the daily limit for wild (adipose unmarked) or hatchery (adipose marked) Chinook is two (2) per day with a minimum length of 45 cm.

Sub-PFMA's 19-7 to 19-10 (Saanich Inlet):
Effective 01 August until 15 October, there is non-retention of Chinook.

Sub-PFMA's 20-6 and 20-7 (Sooke Inlet):

Effective 01 August until 15 October, you may not retain Chinook.

Sub-PFMA's 29-6, 29-7, 29-9, and 29-10(Roberts Bank/Grey Pt.):
Effective 01 April until 30 May, the daily limit is zero (0) Chinook.
Effective 31 May until 31 December, the daily limit for wild (adipose unmarked) and hatchery (adipose marked) Chinook is two (2) per day with a minimum length of 62 cm.
Effective 16 June until 08 August, the daily limit is two (2) Chinook per day which must be greater than 62 cm and less than 77 cm. You may not retain Chinook with a fork length less than 62 cm or greater than 77 cm.

- **Sockeye:**

Effective 26 July until 30 July, in those waters open to salmon fishing in the following PFMA's, the daily limit for recreationally caught Sockeye is four (4) per day:
PFMA's 13 to 15, 17 to 19, 20 (SG), 28, and 29.

- **Pink:**

Effective 01 August until 30 September, the daily limit for Pink is two (2) per day with zero (0) retention for other species of salmon in a portion of sub-PFMA 17-13 (Depature Bay/Nanaimo Harbour).